

## MIDDLE SCHOOL STUDENTS' INTRINSIC MOTIVATION AND EXPECTANCY VALUE AFTER PARTICIPATING IN TEAM SPORT UNITS

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**Kim M., et. al.** Background/Purpose. K-12 students' motivation levels have declined in physical education (PE) due to the lack of effective instructional practices, inappropriate class activities and gender inequities. Middle school students have shown low levels of motivation in physical education and lack of interest in its content. Therefore, the purpose of this study was to examine middle school students' intrinsic motivation and expectancy value after participating in team sports units. Method. Participants consisted of 262 students (122 males; 140 females) from three middle schools located in the southwest region of the United States. After participating in team sport units during PE, the participants completed the expectancy-value questionnaire (Eccles & Wigfield, 1995) and motivation inventory (McAuley, Duncan, & Tammen, 1989). Analysis/Results. Data were analyzed by employing descriptive statistics, *t*-test, and analysis of variance. Results showed that 6th grade students perceived significantly higher expectancy-value and intrinsic value than 8th grade students in team sports. In addition, male students exhibited significantly higher expectancy-value and intrinsic value compare to female students. However, there was no statistically significant difference among ethnic groups. Conclusion. This study suggests that female students had lower levels of intrinsic motivation and expectancy value in team sports compared to male students. Furthermore, as students' grade level increased from 6th to 8th grade, intrinsic motivation and expectancy value decreased.

**Key Words:** physical education, school age children, instruction, content

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School physical education (PE) is regarded as a critical venue to promote children and youth physical activity (PA) levels (McKenzie, 2007; Kahn et al., 2002). PE helps students develop motor and sports skills as well as how to lead a healthy and physically active lifestyle (Corbin, 2002; Corbin, Kulinna, & Yu, 2019; Kulinna, Corbin, & Yu, 2018). Therefore, PE teachers are tasked with creating an effective environment to educate and motivate students to participate in PA in and out of the PE setting. The field of PE has dedicated a substantial amount of effort in defining quality PE. The National Standards & Grade Level Outcomes for K-12 PE (The Society of Health and

Physical Educators [SHAPE] America, 2014) and Essential Components of PE (SHAPE America, 2015) documents are evidence of these efforts. Despite the efforts to improve the quality of PE, there is a decline in student participation in PE (Duncan, Duncan, Strycker, & Chaumeton, 2007).

Significant physical and psychological changes during the adolescent years have been found to be a major contributing factor to the decline in student participation in PE (Eccles et al., 1997). These changes play a significant role in influencing students' attitudes, behavior, and motivation toward participation in PE classes (Ennis, 1999). For example,

studies have shown that middle school students' motivation decline as they experience physical and emotional changes (Mowling, Brock, Elier, & Rudisill, 2004; Spittle & Byrne, 2009). Additionally, Ennis (1999) argued that middle school students are prone to judge themselves according to their skill competency and physical appearance. Students may be hampered by feelings of inadequacy of their physical skill level and avoid participating in PE by comparing their skills to other skillful students. Furthermore, Ishee and Smith (2013) pointed out that there is a tendency in which students in middle school may feel uncomfortable changing clothes around their peers before and after PE class as they become more sensitive about their body image. Concomitant with students' physical and psychological changes during middle school, students' overall perception toward PE tends to be negative due to lack of effective teaching practices (Garn et al. 2013, McCaughtry, Martin, & Fahlman, 2013), inappropriate class environments (Parish & Treasure, 2003) and gender inequities (Ennis, 2011).

Team sports are popular activity across all age groups (Watson et al., 2016). Although the preference of team sports participation varies based on the age group and gender (Harrison & Narayan, 2003), team sports attract many individuals. Song, Carroll, Lee, and Fulton (2015) found that team sports were listed as one of the most favorite physical activities among adolescents and second most popular for male adults. In secondary PE, team sports have been a predominant content area because they can easily accommodate large class sizes, promote social and cooperative behaviors, and develop cardiorespiratory endurance (Coakley, 2017). However, research suggests that students' experiences in team sports are different depending on their skill ability level (Pope & O'Sullivan, 2003). It is notable that despite the popularity of team sports students in middle school may have different motivation for engaging in this content area.

The study of motivation has a long history. Motivation can be explained as a critical underlying factor about how and why people act and behave during a given task or work (Ryan & Deci, 1980). In PE, the topic of motivation is critical as the level of K-12 students' motivation has declined (Ntoumanis,

Barkoukis, & Thøgersen- Ntoumani, 2009). Studies revealed that lesson activities, environment, evaluation, and social opportunities are associated with students' motivation in PE (Wiersma & Sherman, 2008; Xiang, McBride, & Guan, 2004). Thus, it is critical that physical educators understand what affects students' motivation. Specifically, to increase middle school students' intrinsic motivation and expectancy value, PE teachers must be able to design and implement developmentally appropriate lessons and create a positive environment that can encourage students to engage in class.

According to Ryan and Deci (1980), intrinsic motivation is defined as "the inherent tendency to seek out novelty and challenges, to extend and exercise one's capacities, to explore, and to learn" (p.70). Intrinsic motivation indicates an individual's inclination and reflects the satisfaction inherent in performing each activity (Deci & Ryan, 1980). The concept of intrinsic motivation influences a series of human nature behaviors such as cognitive, affective, and behavioral outcomes. Studies have found that the most autonomous intentions and behaviors are derived from intrinsic motivation (Vallerand, 2001; Sansone & Harackiewicz, 2000). In PE, the importance of intrinsic motivation has been documented. Studies suggest that one way to increase the level of students' participation in PE is to focus on students' intrinsic motivation as it enhances the importance of an internal value on a task (Gao, Lee, Solmon, & Zhang, 2009; Xiang, Bruene, & Chen, 2005). Additionally, when students are intrinsically motivated, it can lead to better attitude, outcomes, and engagement in the learning process (Cerasoli & Ford, 2014). As motivation plays a critical role in impacting students, examining the ways to enhance students' motivation in PE is a crucial task.

The expectancy value theory has been applied extensively to explain and capture motivational patterns in PE (Xiang, McBride, & Bruene, 2004). As its name implies, the expectancy value model focuses on two critical aspects: (a) an expectation of being successful in a current or distant task and (b) having a value for doing the task. The expectancy value consists of three components: ability belief, expectancy, and usefulness and importance. Ability belief refers to the individual's perception of current

competence at a given task (Eccles & Wigfield, 2002). For instance, a student may wonder: How good am I in PE? Bembenuddy and Hefer (2008) suggest that if students expect to achieve a task, they are more likely to sustain and put more effort into being successful. Expectancy focuses on the individual's ability in the future, or, how well the individual expects to do in PE this semester. Finally, usefulness and importance incorporate one's perception of the task's ability to confirm salient and valued characteristics of the self (e.g., masculinity, femininity, competence), to provide a challenge, and to offer a forum for fulfilling achievement, power, and social needs" (Eccles & Wigfield, 1995, p. 89). Specifically, usefulness and importance refer to the personal importance of doing well on a given task (Eccles & Wigfield, 1995). For example, a student who believes that participating in various physical activities is important will actively engage in PE class. Xiang et al. (2004) conducted a study with 414 second and fourth grade students to examine the effect of expectancy value on throwing tasks. Results demonstrated that students are prone to take part in the throwing tasks when they believe they are competent and see the task as interesting and important. In other words, there was a positive relationship between expectancy values and throwing tasks. In summary, the expectancy-value models illustrate that variables associated with individuals' values and expectations are linked to motivation related to a task.

The purpose of this study was to examine middle school students' intrinsic motivation and expectancy value after participating in team sport units. Given that the content of team sport is dominant in secondary PE, the findings of this study can shed light about how to motivate students to actively engage in team sport units.

## METHODS

### *Participants*

This study was approved by the University Institutional Review Board. The participants consisted of 262 middle school students from the southwest region of the United States and were selected as a result of a convenient sample. Students range from 11 to 13 years of age. Specifically, 47% of the students were males ( $n = 122$ ) and 53% female ( $n = 140$ ). In

addition, 29% of the students were in 6th grade ( $n = 76$ ), 40.5% in 7th grade ( $n = 106$ ), and 30.5% ( $n = 80$ ) in 8th grade. Most students were classified as 59.2% Caucasian ( $n = 155$ ), 28.6% Hispanic ( $n = 75$ ), and 12.2% other including African American/Asian ( $n = 32$ ).

### *Instrumentation*

The Intrinsic Motivation Inventory (IMI) developed by McAuley et al. (1989) was used to measure the level of students' intrinsic motivation after participating in team sport units. The IMI is the most used questionnaire to measure the level of students' intrinsic motivation in the context of education, as well as in PE (Tsigilis & Theodosiou, 2003). The IMI consists of 16 items, including the following four sub-scales: (a) enjoyment, (b) competence, (c) effort, and (d) tension/pressure. The IMI uses a point a 7-Likert scale format ranging from 1 (e.g., very unsuccessful) to 7 (e.g., very successful). Example questions include: "Do you enjoy team sports?", and "Do you describe team sports as very interesting?".

The student expectancy value was measured by using an Expectancy-Value Questionnaire (EVQ) developed by Eccles and Wigfield (1995). EVQ consists of 11 items by employing 5-point Likert scale (e.g., 1= not good, 5= very good). Specifically, five items measure expectancy value, and six items are related to measuring the attainment (importance), intrinsic (interest), and utility (usefulness) values. Example questions include: "How good at team sport are you, compared to other students?", "How useful is what you learn in team sport lessons?", and "How important is it to you to be good at team sport?"

### *Procedures*

Nine middle school PE teachers recommended by a local university Physical Education Teacher Education (PETE) faculty were contacted via email. The email contained the purpose of the study, procedures, and an invitation to participate in the study. Three out of nine middle teachers agreed to participate in the study. Each teacher agreed to teach a unit of team sport. Teacher A taught a volleyball unit, teacher B taught a basketball unit, and teacher C taught a soccer unit. Each unit was selected based

on the teacher's preference. Units were seven days long and lessons within the unit lasted 50 minutes. For example, the basketball unit included technical and tactical practice, a variety of tasks, and small/full sided games. The first two to three lessons focused on technical skills such as dribbling, passing, and shooting. The next one to two lessons involved tactical understanding including the importance of movement on the court with and without the ball, offense and defense skills, and effective ball movement. The last two lessons provided students with an opportunity to play games. The games consisted of a small sided game such as 1 vs 1 or 2 vs 2, and eventually students played full sided games. Similarly, the first two to three lessons in the soccer unit included basic skill practice such as controlling, trapping, passing, and dribbling. During lessons three and four, students were taught tactical strategies and during lessons six and seven small sided (3 vs 3 or 5 vs 5) and full sided games. The volleyball unit lessons one to three consisted of fundamental skill practice including overheadpass, forearm pass, serving, and attacking. Tactical activities such as moving into position after reading a play were taught during lessons four and five. The final two volleyball lessons, students played 4 vs 4 and full sided games. Furthermore, all of the teachers used direct instruction to deliver the units.

Before the administration of the surveys, assent forms were obtained in accordance with the University Institutional Review Board. Parents were informed and granted permission for the survey's dissemination. Immediately after the completion of the team sport units, participants completed the surveys. Anonymous setting was created by allowing enough space between participants. While the participants completed the survey, PE teachers were asked to leave the gymnasium. The surveys took approximately 15 to 20 minutes to complete. All data obtained were manually entered into the Statistical Package for the Social Sciences (SPSS) 22 (IBM Corp, 2015).

### Data Analysis

ANOVA and *t*-test were used to determine differences between means. Scheffé post hoc test analysis was employed if differences were found on

the *F*-test. All the statistical significance tests were set at an alpha level of .05 ( $\alpha = .05$ ). Data was analyzed using SPSS 22.0. The results of the reliability analysis for the IMI yielded a Chronbach's alpha of .73 for enjoyment, .82 for competence, .80 for effort, and .84 for tension and pressure. Regarding the EVQ, the results yielded a Chronbach's alpha of .78 for ability belief and expectancy and .83 for usefulness and importance. Based on the studies by McAuley et al., (1989) and Eccles and Wigfield (1995), the reliability levels obtained in this study for both instruments were considered acceptable.

## RESULTS

Table 1 shows the mean scores of middle school students' intrinsic motivation in team sport by grade level. The results from the one-way ANOVA indicated that overall intrinsic motivation decreased as grade level increased. Specifically, for enjoyment, 6th grade students (showed significantly higher mean score than 7th grade students and 8th grade students,  $F(2,259) = 6.75, p < .05$ . Regarding effort, 6th grade students showed significantly higher mean score than 7th grade students and 8th grade students,  $F(2,259) = 8.391, p < .05$ . Six grade students showed significantly higher mean score than 7th grade students and 8th grade students on tension and pressure,  $F(2,259) = 3.35, p < .05$ . However, no significant differences were found for students' competence.

Table 1. *Differences in Intrinsic-Motivation by Grade*

Factor	6 <sup>th</sup> <i>n</i> =76		7 <sup>th</sup> <i>n</i> =106		8 <sup>th</sup> <i>n</i> =80	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
EJ	5.53	1.10	4.96	1.20	4.92	1.19
CO	5.36	1.03	5.02	1.12	5.02	1.06
EF	5.64	0.85	5.27	0.99	5.00	1.06
TP	5.67	1.03	5.26	1.13	5.31	1.11

Note. EJ=Enjoyment, CO=Competence, EF=Effort, TP=Tension and Pressure

Table 2 shows the mean scores for male and female middle school students' intrinsic motivation in team sport. The *t*-test analysis revealed that male students showed higher mean score than female students regarding enjoyment,  $t(261) = 2.26, p < .05$ . Also, male students showed higher mean score than female students in terms of effort,  $t(261) = 2.00, p < .05$ . However, no significant differences were found for male and female students' competence and tension and pressure in team sports.

Table 2. *Differences in Intrinsic Motivation by Gender*

Factor	Male <i>n</i> =122		Female <i>n</i> =140	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
EJ	5.29	1.16	4.96	1.21
CO	5.25	1.06	5.01	1.09
EF	5.43	0.98	5.18	1.01
TP	5.50	1.06	5.30	1.14

Note. EJ=Enjoyment, CO=Competence, EF=Effort, TP=Tension and Pressure

Table 3 shows the mean scores of middle school students' intrinsic motivation by ethnicity. The results from the one-way ANOVA indicated that no significant differences were found regarding students' ethnicity.

Table 3. *Differences in Intrinsic Motivation by Ethnicity*

Factor	Caucasian <i>n</i> =155		Hispanic <i>n</i> =75		Other <i>n</i> =32	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
EJ	5.07	1.26	5.19	1.14	5.14	1.19
CO	5.05	1.10	5.24	1.09	5.21	0.98
EF	5.24	1.00	5.34	1.02	5.42	0.99
TP	5.31	1.15	5.59	1.03	5.34	1.03

Note. EJ=Enjoyment, CO=Competence, EF=Effort, TP=Tension and Pressure

Table 4 illustrates the mean scores of middle school students' expectancy-value in team sports by grade level. 6<sup>th</sup> grade students showed significantly higher mean score than 7<sup>th</sup> grade students and 8<sup>th</sup> grade students regarding ability belief and expectancy,  $F(2,259) = 3.36, p < .05$ . In terms of usefulness and importance in team sports, 6<sup>th</sup> grade students showed significantly higher mean score than 7<sup>th</sup> grade students and 8<sup>th</sup> grade students,  $F(2,259) = 6.47, p < .05$ .

Table 4. *Differences in Expectancy-Value by Grade*

Factor	6 <sup>th</sup> <i>n</i> =76		7 <sup>th</sup> <i>n</i> =106		8 <sup>th</sup> <i>n</i> =80	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
AB & EX	4.19	0.57	3.99	0.64	3.98	0.64
UI	3.99	0.54	3.77	0.69	3.59	0.80

Note. AB=Ability Belief, EX=Expectancy, UI=Usefulness and Importance

Table 5 illustrates the mean scores of male and female middle school students' expectancy-value in team sport. Results from the *t*-test analysis showed that male students scored significantly higher than female students regarding ability belief and expectancy,  $t(261) = 2.69, p < .05$ . In addition, male students scored significantly higher than female students in terms of usefulness and importance in team sports,  $t(261) = 2.12, p < .05$ .

Table 5. *Differences in Expectancy-Value by Gender*

Factor	Male <i>n</i> =122		Female <i>n</i> =140	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
AB & EX	4.14	0.60	3.94	0.61
UI	3.88	0.62	3.69	0.76

Note. AB=Ability Belief, EX=Expectancy, UI=Usefulness and Importance

Table 6 shows the mean scores of middle school students' expectancy value by ethnicity. The results from the one-way ANOVA indicated that no significant differences were found regarding students' ethnicity.

Table 6. *Differences in Expectancy-Value by Ethnicity*

Factor	Caucasian <i>n</i> =155		Hispanic <i>n</i> =75		Other <i>n</i> =32	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
AB & EX	4.03	0.57	4.05	0.70	4.03	0.62
UI	3.73	0.70	3.91	0.71	3.73	0.70

Note. AB=Ability Belief, EX=Expectancy, UI=Usefulness and Importance

## DISCUSSION

The purpose of this study was to examine middle school students' intrinsic motivation and expectancy value toward team sport in PE. Specifically, this investigation sought to examine the influence of team sport on middle school students according to their gender, grade, and ethnicity. This study revealed that higher grade level students had lower level of intrinsic motivation and expectancy value after participating in team sport units. In addition, it was found that female students had lower level of intrinsic motivation and expectancy value on team sports.

The result of this study found that as grade level increased there was a significant decline in intrinsic motivation in team sports. Regarding intrinsic motivation, 8<sup>th</sup> grade students experienced less enjoyment in relation to 6<sup>th</sup> and 7<sup>th</sup> grade students. Middle school students are taught team sports repeatedly each year (Walters, Schluter, Oldham, Thomson, & Payne, 2012). Consequently, students may perform and practice similar content each year. This lack of novelty makes it difficult to motivate and stimulate middle school students. Studies have shown that there is a positive relationship between students' motivation and a variety of contents in PE (Blanchard et al., 2007; Xu & Liu, 2013). Specifically, when students are taught a variety of activities and challenged their skill levels by participating new

lessons, it would help increase their motivation. This study suggests that teaching team sports can be a part of the content taught in secondary PE; however, it is necessary for physical educators to implement a wide range of activities in their lessons to motivate students in class. A primary goal of middle school PE is to enhance students' knowledge, develop their health-related fitness, and teach or refine motor skills applicable to a wide range of sports and physical activities such as individual, team, and outdoor pursuits, invasion games, dance, and fitness (National Association of Sport and Physical Education [NASPE], 2004). SHAPE America (2014) strongly recommends that team sports should not be the center of the content in secondary PE. According to SHAPE America (2014), team sports "do not meet the needs and interests" for the most of the secondary school students (SHAPE America, 2014, p. 54). When students are taught various lessons that meet their interests and provide new experiences, they are more likely to be engaged and motivated in PE. Additionally, despite the popularity of team sports among adolescents, a study showed that only 13% of adults participate in team sports (Song et al., 2015). By teaching team sports exclusively, PE programs cannot help students prepare for future PA participation. In other words, for adolescents to continue being physically active, it is essential for them to learn life-long physical activities. Therefore, it is vital for physical educators to recognize the importance of teaching and incorporating various content areas. Teaching new physical activities can help increase students' motivation as well as preparing them to lead a physical active lifestyle. Future research should examine broader age groups, including elementary and high school students to explore their intrinsic motivation and expectancy values in team sport units. This may aid in comparing the similarities and differences of the perceptions of team sport units among different age groups.

The results of expectancy value were also consistent with the outcome of intrinsic motivation in this study. Consistent with previous findings (Pill, Penney, & Swabey, 2012; Chase, 2001) 8<sup>th</sup> grade students in this study expected less in the area of usefulness and importance in team sports than 7<sup>th</sup> and 6<sup>th</sup> grade students. Wigfield and Eccles (2001)

also found that adolescents showed a strong interest in team sports, but their perceptions on usefulness and importance decreased as they aged. According to Gao and colleagues (2011), middle school students consider a high level of usefulness and importance when they participated in health-related lessons including fitness and weight training. The researchers pointed out that learning health-related fitness activities provide a high value for middle school students. As a result, students are more likely to perceive high levels of usefulness and importance in health-related lessons.

This study revealed that female middle school students showed a lower level of intrinsic motivation and expectancy value in team sports. The result of this study is in line with other studies that examined gender differences in PE (Subramaniam & Silverman, 2007; Subramaniam & Silverman, 2002). The findings related to intrinsic motivation in gender gap can be possibly explained by focusing on the notion of enjoyment. According to Prusak and Darst (2002), female students preferred and enjoyed more cooperative games than team sport. Cooperative games are designed to promote collaboration and assist one another and provide students with an opportunity to work as a team. Ntoumanis (2001) concluded that when middle school students participate in cooperative games, they are more likely to feel connected and increase the chance of building friendships. This is particularly important for female students who place a great deal of importance on social relationships and bonds. Thus, it is important for PE teachers to provide them with opportunities to positively interact with their peers in PE class. This positive relationship and social aspect may play a critical role in increasing the enjoyment and overall intrinsic motivation of female students in PE. In contrast, team sports tend to create a competitive environment in which there are frequent physical contacts, potential risks of injury, accidents, emotional tensions, and a win-at-all-cost mentality. In other words, the heavy emphasis on competition in team sports may not attract female students. The characteristics of team sports can result in decreasing the level of enjoyment in female students which is associated with intrinsic motivation.

In terms of expectancy-value, gender differences may be strongly connected with the feelings of competency in team sports. One of the critical components in expectancy-value is the sense of “being good at it” and “being competent in tasks” (Eccles & Wigfield, 2002). Evidence supports that female students had lower level of competence in sports (Morgan et al., 2003; Xiang, McBride, Guan, & Solmon, 2003). Team sports require several skill sets, physical strength, and endurance. Lack of confidence, embarrassment, and negative self-beliefs have been identified as possible barriers for team sports participation in female adolescents (Johnson, Eriwn, Kipp, & Beighle, 2017). This lack of competency may result in diminishing female students’ level of expectancy value in team sports. Additionally, as team sports depend on another teammate, it is commonly seen that lower skill level players are less likely to engage in a game and even are not well received by teammates. This lower competence of skills can affect negatively female students’ participation in team sports. Garn et al. (2013) argued that PE programs tend to use male oriented curricula, lessons, and equipment. The heavy emphasis of team sports in secondary PE may aggravate gender biases and transcend the significant enjoyment discrepancy. Female students’ lack of skills and competence in team sports can even negatively affect their enjoyment and participation in PE.

Additionally, research pointed out that gender differences regarding motivation and expectancy value in PE may not simply be derived from overall physical and skill differences (Gu & Solmon, 2016). Rather, it can be associated with the type of activities and lessons that students participate in PE (Todorovich, 2001). Research suggests that secondary school female students exhibit higher level of interest in gymnastics and dance lessons (Johnson et al., 2017). To overcome the gender gap, physical educators should consider providing lessons and activities that allow female students to feel competent, experience enjoyment and success. By seeking and providing new perspectives of teaching units, methods and strategies, physical education teachers should be able to enhance the level of middle school students’ intrinsic motivation and expectancy-value in physical education.

## LIMITATIONS

There are several limitations in this study. First, this study used a convenience sampling technique and caution should be used in generalizing the results. Second, students were taught team sport units for seven days which may not be sufficient time to capture the students' intrinsic motivation and expectancy values in team sport units. Finally, each teacher planned and instructed a different team sport unit. Therefore, the teaching style, method of instruction, learning outcomes, activities, and environment were different. For example, students

who were taught basketball may perceive relatively high competency and tension while those who were taught volleyball may perceive relatively low competency and tension. Even though both are considered team sport, playing basketball and volleyball required a different skill set.

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