



## Past Sports Participation, Self-Efficacy, Goal Orientation, and Academic Achievement Among College Students

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**ABSTRACT.** The relationship between past sports participation in high school and levels of general self-efficacy, goal orientation, and GPA in college were examined among 149 college undergraduates. Participants were recruited from both MTurk and a local university and completed an online survey, which included a demographic questionnaire, the General Self-Efficacy Scale, the Goal Orientation Instrument, and a sports participation questionnaire. Significant positive correlations were found between past sports participation and current levels of general self-efficacy ( $r = .20, p < .05$ ), learning goal orientation ( $r = .22, p < .001$ ), and prove performance goal orientation ( $r = .21, p < .001$ ). No significant relationships were observed for college GPA. The findings suggested that high school sports participation may be beneficial in increasing levels of general self-efficacy in college, which could therefore improve academic performance in college. The current study was the first to evaluate the relationship between participation in sports during high school and current levels of self-efficacy, goal orientation, and academic performance in college students. Future directions for research are discussed.

**Keywords:** sports, self-efficacy, goal orientation, academic performance, college students

Experimental and observational evidence has shown that school-aged children and youth should accumulate an average of 30 to 60 minutes of physical activity a day in order to obtain maximum health benefits (Janssen & LeBlanc, 2010). This activity should be of at least moderate intensity and consist of mostly aerobic forms of exercise in order to lead to the most health benefits (Janssen & LeBlanc, 2010). Consistent levels of such physical activity are associated with physical health benefits such as lower levels of cholesterol, decreased risk of injury, better bone density, healthier blood pressure, and decreased risk for obesity (Janssen & LeBlanc, 2010). In addition to physical health benefits, physical activity has shown a positive impact on psychological variables such as fewer depressive symptoms, improved learning and memory, and better cognitive health (Fredricks &

Eccles, 2005; Janssen & LeBlanc, 2010; Trudeau & Shephard, 2008). Researchers have also noted that school dropout rates among students in grades 8 through 12 were significantly reduced by one form of physical activity, sports participation, and that such participation increased engagement in school and self-esteem among students, which indirectly improved academic performance (Fredricks & Eccles, 2005; Trudeau & Shephard, 2008).

A significant body of research literature has examined extracurricular activity in general, and sports participation specifically, among youth and related developmental outcomes (e.g., Eccles & Barber, 1999; Mahoney, Vandell, Simpkins, & Zarrett, 2009). For example, Eccles and Barber (1999) conducted an early study with predominantly European-American adolescents and found that participation in organized activities was linked to indicators

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of both positive and negative outcomes. Sports involvement was linked to positive educational outcomes but also to involvement in risky behaviors (e.g., consuming alcohol). Of the many organized activities that adolescents can participate in, sports have historically received the greatest amount of attention (Mahoney et al., 2009). Adolescents who participate in organized sports, compared to those who do not, tend to have higher high school grade point averages (GPAs) and a greater likelihood of attending college (Barber, Eccles, & Stone, 2001). Additionally, research has suggested that participating in a greater number of organized extracurricular activities, including sports, is positively associated with adjustment, which might be explained by the unique learning and development experiences that extracurricular activities offer (Fredricks & Eccles, 2010). Furthermore, research has suggested that involvement in more years of organized sports is positively associated with better academic performance and psychological adjustment (Bohnert, Aikins, & Arola, 2013). Researchers in this field have suggested that these positive developmental outcomes may be facilitated by specific skills, values, and beliefs that are associated with sports involvement (Hansen & Larsen, 2007). Whether sports involvement and these values, beliefs, and skills and academic impact extend into the college years has yet to be examined.

In recent research with adults, participation in physical activity has been positively related to one type of belief system—the psychological variable of self-efficacy (Çetinkalp & Turksoy, 2011; Kenyon, Kubik, Davey, Sirard, & Fulkerson, 2012; Kvarme, Haralsdóttir, Helseth, Sorum, & Natvig, 2009). Self-efficacy, or the belief about one's ability to succeed in accomplishing a task, behavior, or desired outcome (Bandura, 1977, 1986), has been categorized and measured in different ways. The current study measured general self-efficacy, which refers to individuals' overall beliefs in their abilities to accomplish a desired task (Høigaard, Kovač, Øverby, & Haugen, 2015). General self-efficacy, for example, has been shown to significantly and positively relate to physical activity (Kvarme et al., 2009), as well as to mediate the effect between perceived barriers of physical activity and actual levels of physical activity (Kenyon et al., 2012). The previous studies did not include sports participation as a type of physical activity, thus making the current study unique.

In addition to its relationship to physical activity and possible relationship to sports participation,

findings have also linked self-efficacy to a variety of emotional responses (e.g., stress, coping, and well-being) and other behaviors including academic performance (Au, 2015). According to Pajares (1996), self-efficacy beliefs can have important influential effects on an individual's ability to accomplish a task because self-belief impacts determination, perseverance, and resilience, which might be related to sports participation. In addition to effort and behavior, self-efficacy beliefs impact thoughts and emotional reactions. Lower self-efficacy can lead to doubt, stress, depression, and less creativity, which in turn can affect one's ability to perform in various settings such as sports participation and academics. Those with higher self-efficacy, however, are calmer and more confident in their abilities, leading them to better performance than individuals with similar cognitive ability but lower self-efficacy (Pajares, 1996).

### **Self-Efficacy and Academic Performance: Direct Links and Mediators**

Self-efficacy has been positively linked to academic performance in many ways such as college performance and persistence (Brown, Lent, & Larkin, 1989), college retention and adjustment (Caskie, Sutton, & Eckhardt, 2014), and perceptions of academic success, but not necessarily performance on a task (Lane, Hall, & Lane, 2004). Additionally, a meta-analysis supported Bandura's (1977, 1986) theory and ideas about educational-vocational behavior suggesting that self-efficacy is related to academic behaviors (Multon, Brown, & Lent, 1991).

Several mechanisms underlying the relationship between general self-efficacy and academic performance have been proposed (Lodewyk & Winne, 2005). Some research has suggested that individuals' internal feedback during tasks contributes to their self-efficacy, which in turn predicts how difficult individuals will perceive a task (Lodewyk & Winne, 2005). Self-efficacy has also been shown to mediate students' learning style, therefore impacting their academic achievement (Zimmerman, 2000). These findings support the theory that students' self-beliefs in their academic abilities positively contribute to their motivation and ability to perform (Zimmerman, 2000). As we speculate that sports participation is linked to self-efficacy, and the literature suggests a relationship between self-efficacy and academic performance, sports participation might also be related to academic performance.

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### Goal Orientation, Self-Efficacy, and Academic Performance

One factor that has been related to self-efficacy and academic performance, and might also be related to sports participation, is goal orientation. According to goal orientation theory, individuals have either a learning goal orientation or performance goal orientation toward any given task (Dweck, 1986). Individuals with a learning goal orientation focus their attention on increasing their confidence on a task, and performance-oriented individuals focus on increasing their ability to demonstrate or perform a task for others (Harachiewicz & Elliot, 1993). Individuals with a high learning goal orientation believe their skills are malleable, thus giving them more confidence in developing their skills. Individuals with a high performance goal orientation, however, believe their skills are fixed and cannot be increased, making their motivation only to perform well (Dweck & Leggett, 1988). Learning-oriented individuals generally strive to gain knowledge and skills in order to develop competence, whereas performance-oriented individuals prefer to demonstrate their confidence by not receiving negative feedback about their abilities and instead receiving positive judgements about their abilities (Dierdorff, Surface, & Brown, 2010).

Previous research has suggested that those with high learning goal orientation have high levels of self-efficacy because they view everything as a learning experience, whether or not their past experiences were successes or failures (Phillips & Gully, 1997). In contrast, individuals with high performance goal orientation might have lower self-efficacy because they view their abilities and intelligence as fixed (Phillips & Gully, 1997). Such individuals, therefore, lose motivation when not performing to certain standards because they view it as a failure (Phillips & Gully, 1997). Because goal orientation is related to self-efficacy, and self-efficacy seems to be related to sports participation based on its relationship to physical activity, goal orientation might also be related to sports participation.

Also of relevance to failure, in particular, is the fact that learning-oriented individuals tend to adopt an adaptive response pattern, whereas performance-oriented individuals adopt a maladaptive response pattern (Bell & Kozlowski, 2002). An adaptive response pattern is characterized by persistence when an individual encounters failure. This type of response pattern leads to the development of new strategies and increased learning because the individual is determined to conquer the

complex task. On the other hand, the maladaptive response pattern is characterized by the likelihood of choosing to withdraw or give up when faced with failure or a challenging task (Bell & Kozlowski, 2002). Thus, according to Bell and Kozlowski (2002), performance-oriented individuals are likely to put in less effort on a task than learning-oriented individuals because extra effort is viewed as a lack of ability. Encouraging individuals to adopt more of a learning goal orientation rather than a performance goal orientation may lead to increased levels of self-efficacy, and therefore increase performance (Phillips & Gully, 1997). In terms of academic performance, Button, Mathieu, and Zajac (1996) found a strong positive relationship between GPA and learning goal orientation among students.

Although research has shown that a learning goal orientation contributes to superior performance, especially academic performance, other research has shown that the opposite might be true depending on the situation. For example, Mangos and Steele-Johnson (2001) found that individuals with a performance goal orientation outperformed those with a learning goal orientation on complex tasks. Consistent with this finding, other research has suggested that a performance goal orientation may be beneficial to performance in certain situations or with certain tasks that are more complex (Mangos & Steele-Johnson, 2001). Unlike research on learning goal orientation, research on performance goal orientation has demonstrated less conclusive and significant findings (Bell & Kozlowski, 2002). Based on the research showing that the most beneficial type of goal orientation might depend on the type of task and the type of motivation underlying performance goal orientation, VandeWalle and Cummings (1997) separated performance goal orientation into two dimensions: avoid and prove. Avoid performance goal orientation describes individuals who prefer to avoid negative judgments or disconfirmation about their abilities, whereas prove performance goal orientation characterizes individuals who prefer to prove their abilities and competence while gaining favorable judgments from others (Dierdorff et al., 2010). VandeWalle and Cummings (1997) found that measuring performance goal orientation in two dimensions was a better and more accurate measure because it accounts for different motivations underlying performance goal orientation.

### Self-Determination and Self-Efficacy Theory

According to self-determination theory, an individual's ability to achieve a certain level of performance

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for a given activity can be greatly influenced by the development of self-determined motivation, as well as consistent involvement in the activity. In particular, self-determination theory has been applied to research on sports participation and performance, demonstrating that the development of intrinsic motivation is especially impactful in terms of accomplishing sports performance goals and that individuals motivated more by extrinsic factors are more likely to drop out of sports leagues/teams (Ryan & Deci, 2000). Recent research has found positive relationships between self-determined motivation toward participation in sports-related physical activities and the well-being of youth, yet has not examined how these findings might influence or be related to self-efficacy and academic achievement (Inoue, Wegner, Jordan, & Funk, 2015). Both self-determination theory and self-efficacy theory suggest that individuals' perceptions of their capabilities can have a direct (for self-efficacy theory) or indirect (for self-determination theory) effect on performance (Inoue et al., 2015). For example, in terms of sports participation, students' confidence or belief in their abilities to perform well, or improve in a sport, might therefore increase the likelihood that they would be more involved in a sport. Similarly, the level of participation or performance in a sport in students who are strongly intrinsically motivated—motivated by their own interest, enjoyment, or inherent satisfaction—might be influenced indirectly. Based on these relationships, it seems that relationships might exist between sports participation, self-efficacy, and goal orientation.

### **Purpose of Current Study**

Based on current research regarding the relationship between physical activity in general, and sports participation specifically, and a number of psychological variables, the purpose of the current study was to examine the relationships between past participation in high school sports and current levels of self-efficacy, goal orientation, and academic achievement among college students. In the current study, past sports participation was used as a predictor variable for self-efficacy, goal orientation, and academic performance (as measured by college GPA). Similarly, self-efficacy and goal orientation were used as predictor variables for academic performance (GPA).

Considering research that proposes a positive relationship between athletic participation and self-efficacy, the current study aimed to evaluate the relationship between involvement in sports

during high school and current levels of academic performance, self-efficacy, and goal orientation in college students. The current study focused on past sports involvement in high school, as opposed to concurrent sports involvement in college, in order to examine any carryover implications that past sports involvement might have on college students with regard to their self-efficacy, goal orientation, and academic achievement. We chose to operationalize sports participation in a variety of ways including hours per week (intensity of involvement), years of participation (intensity of involvement and level of commitment), number of sports activities (breadth of involvement), and a self-report of the participants' perceived level of participation and commitment. However, we chose to use the number of years of participation in a sports activity as the measure in our analyses because it was the most normally distributed of the sports participation variables among the current sample.

Consistent with previous research on self-efficacy, we hypothesized that students who participated in sports in the past would have higher levels of general self-efficacy. Additionally, we hypothesized that past sports participation would be positively correlated with learning goal orientation and prove performance goal orientation due to a desire to learn or gain favorable judgments about their abilities from others, but that sports participation would be negatively correlated with avoid performance goal orientation because those attempting to avoid negative judgements about their abilities may participate less in sports.

Considering the desire to gain favorable judgements with prove performance goal orientation, we hypothesized that individuals who are more prove performance goal oriented would have higher self-efficacy, and individuals who are trying to avoid negative judgements (avoid performance goal-oriented individuals) would have lower self-efficacy because they might have less confidence in their abilities. Despite the research demonstrating that performance goal orientation might be beneficial for certain tasks or under certain circumstances, more research has found learning goal orientation to be related to higher self-efficacy, thus we hypothesized that self-efficacy would also be positively related to learning goal orientation.

In terms of associations with academic performance, we hypothesized that individuals with high levels of learning goal orientation would have higher academic performance, as measured by college GPA. Because we hypothesized that there would be a

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relationship between learning goal orientation and self-efficacy, we also hypothesized that self-efficacy would be positively related to college GPA, meaning that higher self-efficacy and higher levels of learning goal orientation would be related to better academic performance in college. We also hypothesized that sports participation would be positively correlated with college GPA because those who participated in sports or were more involved in sports would have learned some valuable skills or developed abilities that led them to be more successful in college. Finally, we hypothesized that the combination of general self-efficacy, levels of goal orientation, and past sports participation would explain more of the variance in college GPA than any variable individually. This research is important because of its possible implications for determining factors that may assist with success in, or admission to, college, as well as funding and/or encouragement for sporting activities in all levels of schooling.

## Method

### Participants

Participants included 251 undergraduate college students recruited from Amazon's Mechanical Turk (MTurk) and an online research participation management system at a Christian liberal arts university in Southern California. Of the 251 participants recruited, a total of 149 participants qualified for the study. Participants who were ineligible for the study included the following: participants from the university sample who reported a GPA but had no actual GPA, participants who reported no GPA and identified as first-year students, university participants who identified as first-year students but whose GPA could not be verified, MTurk participants who did not report a GPA or did not report a GPA on a 4.0 scale, and participants who were 3 standard deviations above or below the mean on demographic variables, sports participation variables, or any of the dependent variables. The final sample included 149 participants, which included 56.4% of the MTurk sample and 43.6% of the university sample.

Participants were between the ages of 18 and 36 years, with a mean age of 23.56 years ( $SD = 4.75$ ). More participants identified as women (57.7%) than men (41.6%), and one participant identified as other. Most participants reported their current status in school as sophomores (29.5%), 26.2% of participants reported their status as seniors, 24.8% juniors, 12.1% in their fifth year or more, and 7.4% as first-year students. The most common race reported by participants was European American or

White (59.1%), with 8.7% self-identifying as African American or Black, 13.4% as Asian American, 5.40% as Latino/Latina or Hispanic, 6.1% as Other, and 6.7% as Mixed Race.

## Measures

**Demographic questionnaire.** Participants completed a demographic questionnaire asking about age, sex, year in school, number of units completed, name of university, race/ethnicity, socioeconomic status, level of parent education for each parent, and cumulative college GPA. In addition to self-reporting their college GPA, the GPAs of participants from the university sample were verified with participants' consent by the university's registrar via a confidential coding system.

**General Self-Efficacy Scale.** General self-efficacy was assessed using the 10-item General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995). Items were rated from 1 (*not at all true*) to 4 (*exactly true*). The total score was calculated by finding the sum of all the items. Total scores could range from 10 to 40, with higher scores indicating more general self-efficacy. Sample items included "I can always manage to solve difficult problems if I try hard enough," "It is easy for me to stick to my aims and accomplish my goals," and "I can usually handle whatever comes my way." The  $\alpha$  coefficient for the scale has been shown to be between .76 and .90, indicating moderate to good reliability (Schwarzer & Jerusalem, 1995). The authors of the General Self-Efficacy Scale found the scale to be positively correlated with "emotion, optimism, and work satisfaction," whereas they found negative correlations with "depression, stress, health complaints, burnout, and anxiety" (Schwarzer & Jerusalem, 1995). Cronbach's  $\alpha$  for this scale for the current sample was strong ( $M = 32.37$ ,  $SD = 3.50$ ,  $\alpha = .83$ ).

**Goal Orientation Instrument.** Goal orientation was assessed using Vandewalle's and Cummings's (1997) 13-item Goal Orientation Instrument. The instrument includes three subscales: Learning Goal Orientation, Prove Performance Goal Orientation, and Avoid Performance Goal Orientation. The items were rated on a scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The three subscales of the instrument were scored individually by finding the mean score for each dimension of goal orientation. The higher the average score on each subscale, the higher the level of that particular type of goal orientation. Sample items for the learning goal orientation subscale include "I am willing to select a challenging work assignment that I can learn a

lot from,” and “I often look for new opportunities to develop new skills and knowledge.” Sample items for the prove performance goal orientation subscale include “I am concerned with showing I can perform better than my coworker” and “I try to figure out what it takes to prove my ability to others at work.” Sample items for the avoid performance goal orientation subscale include “I would avoid taking on a new task if there was a chance that I would appear rather incompetent to others” and “Avoiding a show of low ability is more important to me than learning a new skill.” Based on previous research, coefficient  $\alpha$ s were .87 for the learning goal orientation subscale, .83 for the prove performance goal orientation subscale, and .80 for the avoid performance goal orientation subscale, indicating good reliability (Dierdorff et al., 2010). Cronbach’s  $\alpha$  for learning goal orientation ( $M = 18.85$ ,  $SD = 3.18$ ,  $\alpha = .83$ ), prove performance goal orientation ( $M = 17.48$ ,  $SD = 4.24$ ,  $\alpha = .73$ ), and avoid performance goal orientation ( $M = 17.68$ ,  $SD = 4.44$ ,  $\alpha = .73$ ) were all moderate to strong for the current sample.

**Sports participation questionnaire.** Past sports participation was assessed through an 11-item sports participation questionnaire created by the authors for the current study (see Appendix). Sample questions were: “Did you participate in some form of organized team sport as defined above during high school?”; “For how many years during high school did you participate in your sport?”; “How many hours a week did you attend, practice, participate, or play your sport during high school?”; and “How many team sporting activities were you involved in during high school?” Participants ranked their level of participation in their sport from 1 (*no participation*) to 4 (*high level of participation*) and their commitment to the sport from 1 (*not committed*) to 4 (*extremely committed*), as well as self-reported the type of sport(s) in which they participated. Participants were also asked similar questions about whether they currently play a sport in college and whether they participated in other extracurricular activities in the past or currently to be used for exploratory analyses. Questions about sports participation in high school were examined to determine which variable would be used for analyses.

### Procedure

Data were collected through two online surveys on MTurk and through an online university research participation management system. To identify MTurk participants who were college students,

an initial survey asked respondents about their academic standing (i.e., “Are you an undergraduate college student who has completed at least one full semester in college?”). For completing this initial survey, participants were paid \$0.02 immediately through their MTurk account. Each participant who answered affirmatively was invited to complete the second survey consisting of an informed consent and the following questionnaires, which were randomized to control for order effects: a demographics questionnaire, the General Self-Efficacy Scale, the Goal Orientation Instrument, and a sports participation questionnaire. After completion of the second survey, participants were paid \$2.00 through their MTurk account. The participants recruited from the university who had completed at least one full semester in college completed the same second survey as the MTurk participants. These participants received one hour of research credit to fulfill a requirement for their psychology foundations course.

### Creation of the GPA Variable

To examine the validity of self-reported GPA, the actual GPA of the university sample participants were obtained, with participants’ consent, from the university’s registrar through a confidential coding system and were then matched to the corresponding reported GPAs. Correspondence between actual and reported GPAs for the university sample was 78%. Therefore, reported GPA was replaced with actual GPA for the university sample. Given the nature of the data collection of the MTurk sample, we were not able to verify their GPAs.

## Results

### Comparing the MTurk and University Samples

A Multivariate Analysis of Variance (MANOVA) was conducted to examine differences between the MTurk and university samples on general self-efficacy, learning goal orientation, prove performance goal orientation, avoid performance goal orientation, GPA, level of sports participation, level of commitment to sport, and years of participation in sports. A significant Box’s M test ( $p < .001$ ) indicated that there was not homogeneity of covariance matrices. There was not a statistically significant difference based on the sample,  $F(8, 137) = 1.14$ ,  $p = .34$ ; Pillai’s Trace = .06,  $\eta^2 = .06$ . Levene’s test indicated unequal variances for level of commitment to sport ( $F = 5.61$ ,  $p = .02$ ) and level of sports participation ( $F = 7.75$ ,  $p < .01$ ). Follow-up one-way Analyses of Variance revealed no

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significant differences between samples for general self-efficacy,  $F(1, 146) = 1.68, p = .20, \eta^2 = .01$ , learning goal orientation,  $F(1, 146) = 0.56, p = .46, \eta^2 < .01$ , prove performance goal orientation,  $F(1, 146) = 0.48, p = .49, \eta^2 < .01$ , avoid performance goal orientation,  $F(1, 146) = 0.05, p = .82, \eta^2 < .01$ , GPA,  $F(1, 146) = 0.64, p = .43, \eta^2 < .01$ , commitment to high school sport,  $F(1, 146) = 0.26, p = .61, \eta^2 < .01$ , level of participation in high school sport,  $F(1, 146) = 1.08, p = .30, \eta^2 < .01$ , and years of participation in high school sport,  $F(1, 146) = 0.12, p = .73, \eta^2 < .01$ . These results confirmed that the participants from each sample were not significantly different on any main outcome variables; thus the two groups were analyzed together for subsequent analyses.

### Level of Sports Participation

Frequency counts were used to examine levels of sports participation as assessed by different sports participation questions such as the number of years that participants were involved in their sport, the number of sports that participants were involved in during high school, their level of commitment to their sport, and their level of participation in their sport. Based on the distributions of these various sports participation variables, we chose to use the number of years that participants participated in their sport during high school (years) as the measure of sports participation for subsequent analyses. Most participants reported that they participated in their sport for 4 years (38.3%) during high school, 8.1% reported 1 year, 15.4% 2 years, 19.5% 3 years, and 18.8% did not participate in any sports during high school.

### Relationships Between Sports Participation, Self-Efficacy, Goal Orientation, and GPA

Pearson Product-Moment correlations were conducted to examine the relationship among all dependent variables, and the results are shown in Table 1. Statistically significant positive correlations were observed between years of sports participation and general self-efficacy ( $r = .20, p = .01$ ), learning goal orientation ( $r = .22, p = .01$ ), and prove performance goal orientation ( $r = .21, p = .01$ ). There was no significant correlation between years of sports participation and avoid performance goal orientation ( $r = -.07, p = .43$ ).

In terms of the relationship between dimensions of goal orientation and general self-efficacy, statistically significant positive relationships were observed between general self-efficacy and both prove performance goal orientation ( $r = .26,$

$p = .002$ ) and learning goal orientation ( $r = .59, p < .001$ ). Avoid performance goal orientation, however, was not significantly related to general self-efficacy ( $r = -.12, p = .16$ ).

In terms of the relationship between college GPA, learning goal orientation, general self-efficacy, and sports participation, results indicated that GPA was not statistically significantly correlated with learning goal orientation ( $r = .03, p = .73$ ) nor self-efficacy ( $r = .001, p = .99$ ). Additionally, there was no statistically significant relationship between college GPA and past sports participation in high school ( $r = .04, p = .65$ ). Further exploratory analyses between GPA and prove performance goal orientation ( $r = -.01, p = .93$ ) and learning goal orientation ( $r = -.14, p = .08$ ) also did not demonstrate statistically significant relationships.

In addition, a MANOVA was conducted to examine years of sports participation on general self-efficacy, learning goal orientation, prove performance goal orientation, avoid performance goal orientation, and GPA. The Box's  $M$  test ( $p = .19$ ) indicated that there was homogeneity of covariance matrices. There was not a statistically significant difference based on years of past sports participation,  $F(5, 137) = 1.15, p = .29$ ; Wilk's  $\lambda = .85, \eta^2 = .04$ , thus follow-up tests were not performed. Levene's test indicated equal variances for all dependent measures, all  $p$ 's  $> .21$ . Finally, due to the lack of a significant relationship between sports participation and GPA, no regression analyses were conducted.

## Discussion

The purpose of the current study was to evaluate the relationship between sports participation in high school and academic performance in college, as well as other important related factors such as

**Table 1**

### Correlations Between Outcome Variables.

Scale	GPA	APGO	PPGO	LGO	GSE
Years	.04	-.07	.21**	.22*	.20*
GSE	.00	-.12	.26**	.59**	
LGO	.03	-.12	.41**		
PPGO	-.01	.30*			
APGO	-.14				

*Note.* \* $p < .05$  and \*\* $p < .001$ ; Years = number of years the participant played a sport throughout high school; GSE = General Self-Efficacy; LGO = Learning Goal Orientation; PPGO = Prove Performance Goal Orientation; APGO = Avoid Performance Goal Orientation GPA = Grade point average on a 4.0 scale.

general self-efficacy, learning goal orientation, prove performance goal orientation, and avoid performance goal orientation. This study is unique in that it was the first study to examine how past participation in sports is related to current self-efficacy, goal orientation, and academic performance in college. Our hypotheses were partially supported.

The hypothesis that sports participation in high school would be positively correlated with general self-efficacy was supported. This finding aligns with past research demonstrating the positive associations between sports programs and general self-efficacy (Çetinkalp & Turksoy, 2011), as well as self-determined motivation, which could have an effect on performance (Inoue et al., 2015; Ryan & Deci, 2000).

In addition, our hypothesis that sports participation in high school would be positively associated with both prove performance goal orientation and learning goal orientation was supported. These results suggest that, because individuals who are more prove performance-oriented tend to desire to demonstrate or prove their abilities to others and gain favorable judgement (Dierdorff et al., 2010), they might exhibit higher levels of participation in sports because sports involvement provides individuals the opportunity to improve their athletic abilities or performance and then demonstrate that ability (Inoue et al., 2015). Learning goal orientation was most likely positively related to sports participation because learning-oriented individuals seek to work at tasks in order to learn something new or improve competence in their skills; thus, a learning goal-oriented individual may be more likely to be involved in sports for a greater amount of time (Harachiewicz & Elliot, 1993). However, sports participation was not negatively associated with avoid performance goal orientation, perhaps because individuals who wish to avoid negative judgement about their abilities may simply not participate in sports (Dierdorff et al., 2010).

Results supported the hypotheses that learning goal orientation and prove performance goal orientation would be positively correlated with general self-efficacy, although the effect sizes were only moderate. The finding that learning goal orientation is related to higher levels of general self-efficacy is consistent with previous findings that demonstrate that self-efficacy levels are high in learning-oriented individuals because they see their skills as malleable and view everything as a learning

experience (Phillips & Gully, 1997). Performance goal orientation has been linked to lower levels of general self-efficacy because individuals are attempting to prove their abilities rather than desiring to increase their knowledge or abilities (Phillips & Gully, 1997). Performance goal orientation has also been split into different types of performance orientation to measure different underlying motivations—prove (individuals who wish to demonstrate their abilities in order to gain favorable judgements regarding their abilities) and avoid (individuals who wish to demonstrate their abilities in order to avoid any negative judgements about their abilities). Therefore, it may be that individuals who wish to prove their abilities have more confidence in their abilities, thus also have higher general self-efficacy, which explains the relationship we found between prove performance goal orientation and general self-efficacy. The relationship between learning goal orientation and general self-efficacy was stronger than that of prove performance goal orientation, suggesting that learning-oriented individuals still have greater self-beliefs than performance-oriented individuals, which is consistent with previous research (Phillips & Gully, 1997).

According to the two-dimensional model of performance goal orientation, we expected avoid performance goal orientation to be negatively correlated with general self-efficacy, yet the results did not support this hypothesis. It is possible that avoid performance-oriented individuals do not choose to avoid negative judgement about their abilities because they have low general self-efficacy, but rather because of different underlying motivations unrelated to their self-efficacy (VandeWalle & Cummings., 1997).

Contrary to our hypotheses, academic performance was not significantly related to any other variable. This may be due to the small range and lack of variance in our measure of academic performance among the participants (i.e., GPA). Some research has used GPA to categorize participants into low, medium, and high levels of academic performance. However, with our limited number of participants and small range in GPA, such an analysis was not conducted (Lodewyk & Winne, 2005). Although academic performance as measured by GPA was not found to be associated with past participation in sports, it is still possible that sports participation is linked to academic performance through some other aspect of academic performance that is unrelated to GPA such as SAT/ACT scores, motivation, study skills, or academic self-efficacy.

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However, considering the finding that college students' general self-efficacy was related to sports participation in high school, and past research has shown the link between general self-efficacy and academic performance (Inoue et al., 2015), the link between general self-efficacy and GPA might still exist.

### Implications

The findings from the current study have several implications for sports participation in high school. Higher levels of general self-efficacy are related to many factors including the ability to accomplish a task or perform well (Pajares, 1996). Thus, participation in sports, which we found to be related to high levels of general self-efficacy, may be beneficial in increasing levels of general self-efficacy and therefore could increase performance in various tasks including performance academically. This is especially important when considering the ability to succeed academically in college because, if general self-efficacy contributes to academic success, students should be encouraged to take part in activities that help increase general self-efficacy beliefs.

Because having a learning-oriented and prove performance-oriented mindset is strongly related to general self-efficacy, it may be important for parents and teachers to help cultivate these types of mindsets among students in order to boost their levels of general self-efficacy, enhance confidence in their abilities, and help them to view everything as a learning experience despite success or failure. This study is original in that it demonstrated a relationship between past sports participation and current goal orientation and general self-efficacy in college, which means that past participation in sports during high school can have carryover effects into college. Being actively involved in sports during high school was significantly related to general self-efficacy beliefs and levels of goal orientation in college. Therefore, involvement in an organized sporting activity throughout high school may influence general self-efficacy and thus academic success in college. It is possible that sports and athletic participation teaches students valuable skills that the classroom cannot. Therefore, sporting activities should not be viewed as something distracting from school work, but rather beneficial to students' learning. Depending on different areas and socioeconomic backgrounds, athletic programs may not be as readily available for some as they are for others,

thus having possible negative effects on general self-efficacy and academic achievement.

### Limitations and Future Directions for Research

Several limitations to the current study should be noted. First, it was not possible to verify the GPAs for the MTurk sample, which could be related to our lack of significant findings related to GPA because these GPAs might not have been reported as accurately. GPA might also not have been the most comprehensive or representative means of evaluating academic performance among college students because GPAs for different universities might not be comparable, as classes may vary in difficulty from one university to another. Because we did not find any significant results associated with GPA, we were not able to examine our main hypothesis. Future research should evaluate different aspects of college academic performance (e.g., SAT/ACT scores, study skills or habits, motivation, academic self-efficacy) in order to gain a deeper understanding of the role past sports participation may play on academic performance in college, general self-efficacy, and goal orientation. Additionally, the goal orientation scale was not specific to schoolwork and instead emphasized work, which might have impacted the interpretation of the findings. Future research should adapt or create a goal orientation scale that is more specific to schoolwork in order to further examine the relationship between goal orientation and the other outcome variables among college students.

Another limitation of the current study was that students were retrospectively evaluating their sports participation in high school, which might have introduced some recall error. Future research should examine ways in which a composite score for overall sports participation (e.g., number of years, hours per week, level of commitment, level of participation) could be measured in order to better analyze relationships with sports participation. Research should also look at different kinds of sports, including the differences in club and recreational sports, to see if some sports have more or less of an impact than others. The relationship between sports participation on academic performance may also differ in college students by their year in school (e.g., GPAs for first-year and sophomore students may be less stable than those of junior and senior students), and this study did not take class ranking into account. Future research should evaluate the impact that year in school may have on these relationships. It is also possible

that past sports participation and college GPA are unrelated, and current sports participation would have been a more appropriate variable to measure. However, we did not test this question because the purpose of the current study was to examine past sports participation in high school in relation to current levels of self-efficacy, goal orientation, and academic achievement in college. Additionally, future research should experiment with cross-sectional or longitudinal methods in order to gain more accurate results of the relationship between sports participation and academic performance. Further research in this area is important and useful because it will provide more knowledge for educators, parents, and students about how participation in sports influences students' future beliefs about their abilities, mindset, and overall academic performance.

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## APPENDIX

### Sports Participation Questionnaire

Listed below are questions for this section of the survey. Please provide a response for every question and select or write N/A if the question does not apply to you. For the purpose of this study, sports participation in high school is considered any type of team sport that involves some form of organized physical activity. Sports participation can include, but is not limited to: football, basketball, soccer, volleyball, lacrosse, swimming, dance, cheerleading, tennis, baseball, track and field, cross country, etc. Sports participation may be on any form of high school team, junior varsity, varsity, club, intramural, etc., but must be an organized, official team. Teams can be through a high school or outside of school.

Did you participate in some form of organized team sport as defined above during high school?

- ☐ Yes  
☐ No

If you answered yes to the previous question, how many team sporting activities were you involved in during high school? If you did not participate in any sports during high school, please write N/A.

If you participated in a sport, please write the name of one sport you participated in during high school. If you did not participate in a sport during high school, write N/A.

If you participated in more than one sport during high school, please write the name of another sport that you participated in. If this does not apply to you because you did not participate in any sport during high school or only participated in one sport, please write N/A.

If you participated in more than two sports during high school, please write the name of another sport that you participated in. If this does not apply to you because you did not participate in any sport during high school or only participated in two or less sports, please write N/A.

If you participated in more than three sports during high school, please write the name of another sport that you participated in. If this does not apply to you because you did not participate in any sport during high school or participated in three or less sports, please write N/A.

Please answer this question based on the sport you feel like you participated the most in during high school. For how many years during high school did you participate in this sport?

- ☐ 1  
☐ 2  
☐ 3  
☐ 4  
☐ N/A (I did not participate in any sport during high school)

Please answer this question based on the sport you feel like you participated the most in. For how many hours a week did you attend, practice, participate, or play your sport during high school? If you did not play any sports during high school, please write N/A.

Please answer this question based on the sport you feel like you participated the most in. How would you rank your level of commitment to that sport?

- ☐ Not committed  
☐ Slightly committed  
☐ Moderately committed  
☐ Committed  
☐ Extremely committed  
☐ N/A (I did not play any sports during high school)

Please answer this question based on the sport you feel like you participated the most in. How would you rank your level of participation in that sport?

- ☐ No participation  
☐ Some participation  
☐ Average participation  
☐ More than average participation  
☐ High level of participation  
☐ N/A (I did not play any sports during high school)



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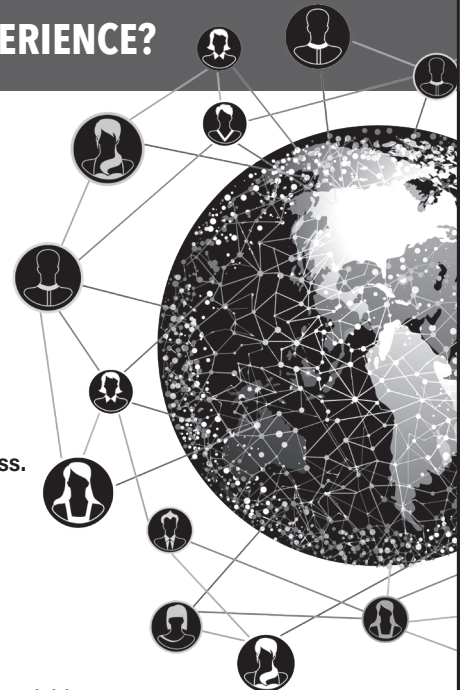
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