

# High School Sport Participation Intensity and Breadth: Relationships with Academic Achievement in a Rural Midwestern High School

**Chad Lang**, *Glenwood Community School District, Iowa*  
**Tyler Tapps**, *Northwest Missouri State University*

The purpose of this study was to address the gap in research related to whether measures of participation (intensity and breadth) demonstrated a relationship with academic achievement for 11th grade student athletes ( $N=128$ ) in a rural Midwestern high school. Anonymous athletic participation and achievement data from 2015-2017 was obtained from the school's archive and analyzed by correlation, hierarchical regression, and one-way ANOVA. Data derived from statistical analyses demonstrated two outcomes regarding sport participation, ACT, and GPA: (a) Intensity demonstrated no statistical significance to student achievement measured by ACT, however intensity demonstrated a statistically significant relationship to cumulative GPA ( $p < .05$ ), and (b) ANOVA analysis demonstrated statistically significant differences in breadth and GPA ( $p < .01$ ) between one sport athletes and three sport athletes. Three sport athletes had statistically significantly higher GPAs than one sport athletes and significantly higher GPAs than two sport athletes. The research was limited to one cross-sectional heterogeneous rural high school population of participants over a three-year period. Furthermore, the study was limited to school-specific athletic participation data as school non-athletic activity and out-of-school activity participation was not available. Results from this study suggest programming and potential practice recommendations for rural school leaders. Future research on ESA sport, activity, and non-school activity participation intensity and breadth related to academic outcomes is justified.

**Keywords:** multisport, academic achievement, social bonds, extracurricular school activities (ESAs), athletic participation

From 1989-2018 overall participation in interscholastic athletics in the United States experienced an increase for 29 consecutive years (Niehoff, 2020). During the same time, participation in out-of-school structured activities for students ages 12-17 also experienced an overall increase in participation (Moore et al., 2014). This increase, while beneficial for socialization, development, and overall health, can come at the expense of other positive undertakings, such as academic achievement (Coleman, 1961; Marsh, 1992; Marsh & Kleitman, 2002). For example, a student who

participates in a non-school select gymnastics team, which travels extensively for much of the school year, may miss out on days of instruction in the school setting, opportunities for instructional feedback, and opportunities to participate in a breadth of school activity offerings. Further complicating the matter, the demand of time, rigor, and pressure related to high school academics has also increased for students (Tavani & Losh, 2003). How does a 21st century student experience positive social and developmental outcomes from activity participation without detracting from the

necessary time required to be successful academically?

Extracurricular school activities (ESAs), a construct popularized by Marsh and Kleitman (2002), have been of specific research interest due to growing popularity of school activity participation as compared to non-school leisure activities. The extant literature review regarding what researchers and practitioners defined as “extra,” “curricular,” or “school-related” is often ambiguous and nuanced, thus it is critical for researchers to define the term clearly to assess implications (Bartkus et al., 2012; Marsh & Kleitman, 2002). The dichotomy of organized sport in the United States for high school students is increasingly intertwined between non-school opportunities and ESAs. On one hand, schools urge students to participate in as many activities (including sports) as possible to provide the most holistic developmental learning experience possible, while on the other hand, societal pressures exist to specialize in specific activities in order to win championships, garner elite status, and earn athletic and academic college scholarships (Bell et al., 2016; Feeley et al., 2016; Luthar & Sexton, 2004). A recent poll by National Public Radio (NPR) revealed that 26% of parents believed that their high school student athlete would be a professional athlete at some point in the future (Kelto, 2016). In U.S. men’s basketball for example, the National College Athletic Association (2020) found 3.5% of high school players go on to play NCAA basketball, with only 1.2% of those players advancing to play professionally. This discrepancy between fact and fallacy helped to recognize the myths associated with sports specialization in the United States that undergird school sport activity participation.

As the trend of sport specialization became prevalent so did a decrease in the intensity and breadth of school activities participation (Baker et al., 2009; Coakley, 2010; Jayanthi et al., 2013). Intensity of participation is defined by the total time spent in activities for a duration of time (typically in hours) (Bohnert et al., 2010). Breadth of participation is often measured by the variety of participation either by activity category or continuum number of activities (Busseri et al., 2006; Eccles & Barber, 1999; Sharp et al., 2015). The ramifications

of lesser school participation are particularly relevant to rural school leaders and PK-20 experts as the bulk of research in activities participation and academic achievement represented significant positive relationships (see e.g., Broh, 2002; Cooper et al., 1999; Holland & Andre, 1987; Marsh & Kleitman, 2002; Melnick et al., 1992). For an increasing number of United States students, in order to placate pressures, which include a rigorous academic schedule, students participate in less varied activities or specialize in one activity (Haddix, 2016). High school athletes from the 2000s and beyond have grown up with youth prodigies specializing to reach elite status as amateurs. Tiger Woods in golf, Michael Phelps in swimming, and Venus and Serena Williams in tennis, were examples who changed the success equation for high school athletes in the 21st century (Coakley, 2010; Myer et al., 2015; Smith, 2015). Therefore, for this study the researchers hypothesized decreases in multisport participation would be problematic for rural school students due to lack of sport opportunities present outside the school context, and reduced school peer and adult social interactions. Furthermore, reduced rural ESA participation linked to specialization is likely to exhibit deleterious effects (Lang, 2021; Showalter et al., 2017). For example, since rural schools require a higher percentage of participation from their students to fill rosters, an increase in students who specialize in out-of-school activities over ESAs, often leaves schools with no choice but to eliminate ESAs with dwindling participation (Feldman & Matjasko, 2005). Consequently, the reduction in rural school ESA opportunities disproportionately affects lower-socioeconomic status (SES) students who cannot afford to participate in out-of-school structured activities, such as club or specialized sports teams. In addition, because rural schools are frequently located in scarce proximity to recreation opportunities, students of lower-SES demographics have reduced opportunities for physical exercise in absence of ESA offerings (Bell et al., 2018).

### **Literature Review**

The gap in knowledge regarding rural participation in ESA athletics and academic achievement was whether intensity and/or breadth of ESA sport participation demonstrated

relationships to academic achievement. If so, to what extent was the relationship linear and did participation exhibit any threshold significance? Little research has been conducted on activities intensity beyond the work of Busseri et al., (2006); Denault et al., (2009) and Fredricks (2012); particularly within the lens of multisport participation, in the United States. This study contributed to previous evidence which posited ESA participation versus non-participation resulted in positive relationships to academic achievement (Shulruf, 2010). To build upon that premise, was more participation better? Does an increase in participation intensity and/or breadth in ESA athletics per school year share a relationship with incremental improvement in measures of academic achievement (Feldman & Matjasko, 2005)? Extant literature on defining breadth included contextualization from categories of organized school and non-school activities to within school definitions of school activities which included athletics (Eccles & Barber, 1999; Rose-Krasnor et al., 2006; Sharp et al., 2015).

Nearly six decades of research regarding participation versus non-participation in ESAs has produced a litany of cross-sectional and longitudinal data to suggest a positive relationship for academic achievement existed for ESA participants (Broh, 2002; Camp, 1990; Eccles & Barber, 1999; Fredricks & Eccles, 2005; Melnick et al., 1992). It was hypothesized that because rural students were more bonded (socially) through increased participation, measured by both intensity and breadth, non-cognitive benefits would exhibit linear associations with academic achievement. The study utilized demographic data including gender, previous academic ability (GPA & ACT), minority status, and free/reduced lunch status to control for confounding variables related to academic achievement and better tease out the relationship between participation and achievement (Camp, 1990; Covay & Carbonaro, 2010; Feldman & Matjasko, 2005).

### **Theoretical Frameworks in ESA Sport Research**

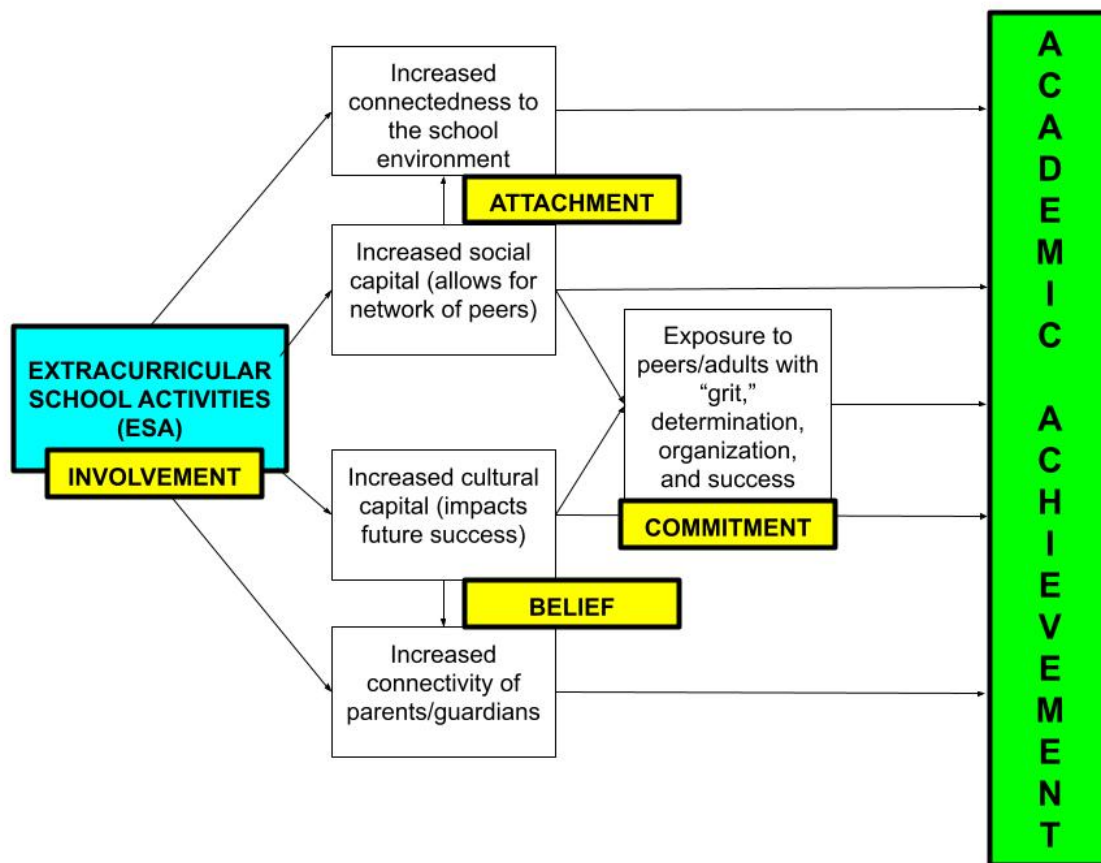
ESA participation and related outcomes have been viewed by researchers through a variety of frameworks such as social and cultural capital

models, developmental models, and the social bond theory. The social bond theory, introduced by Hirschi in *Causes of Delinquency* (1969), is centered on the concept of social bonds individuals form within institutions, such as schools. The social bonds are categorized into four primary dimensions: (a) attachment, (b) commitment, (c) involvement, and (d) belief (Neely & Vaquera, 2017; Peguero et al., 2015). The social bond theory best identified how ESA sports could be viewed in relationship to the effects of participation intensity and academic achievement. Social capital models, as explained by Broh (2002), illustrate how individuals acquire benefits from those around them. The nexus of school and ESA sports intensify acquiring social capital by peers and their families within the school and ESA sport contexts (Hansen et al., 2003; Stearns & Glennie, 2010). Similarly, cultural and social capital models focused on access to networks of peers and adults which were often associated with positive outcomes for students involved in ESAs (Adler & Adler, 1994; DiMaggio, 1982; Shulruf, 2010). For example, a high school student who participates in three sports with three different school coaching staffs is exposed to numerous adult role models exhibiting goal setting, prioritizing, communicating, and problem solving. Additionally, since cultural and social capital largely mirror the SES of students, access to diverse adults (coaches/directors) who have demonstrated success navigating career success broadens student participant horizons and narrows potential gaps related to achievement inequities Gerber (1996) found stronger positive associations related to academic achievement for activities associated with schools versus that of non-school activities. The context of school was central to ESA participant effects as it provided an academic setting where student-athletes maintained contact with the school environment and coaches, unlike some out-of-school opportunities (Darling et al., 2005; Finn, 1989; Marsh & Kleitman, 2002). Furthermore, sponsors of rural ESAs tend to be the same adults that students interact with during the school day, increasing the likelihood of enhanced relationships and access to those with aligned academic practices and values (Assouline et al., 2017). Students who were more involved in an activity setting were better supervised, had deeper

interactions with adults and peers, and were less likely to be involved in negative developmental experiences (Bohnert et al., 2010; Fredricks & Eccles, 2005; Osgood et al., 1996).

**Figure 1**

*Theorized Application of the Social Bond Theory to ESA Sport Participation and Academic Achievement.*



**Note.** The four elements of Hirschi’s social bond theory (involvement, attachment, belief, and commitment) integrated with elements of social capital and cultural capital frameworks.

**Research Questions**

The study aimed to address the following research questions:

1. What is the correlation between ESA high school sports participation intensity and ACT achievement at Lanlaur High School (pseudonym) from 2015-2017?
2. What is the correlation between ESA high school sports participation intensity and

GPA at Lanlaur High School from 2015-2017?

3. Is there a relationship between ESA high school sport participation intensity and GPA at Lanlaur High School from 2015-2017 when previous academic ability is used as a covariate?
4. Is there a difference between ESA high school sport participation breadth and GPA at Lanlaur High School from 2015-2017?

The research questions were designed to align with developmental theory and social bond theory while incorporating literature from social and capital models within schools (Broh, 2002; Eccles & Gootman, 2002; Feldman & Matjasko, 2005; Marsh & Kleitman, 2002).

### **Methodology**

#### **Participants**

The participants of the study were three sets of 11th grade students at Lanlaur High School, a rural Midwestern high school, from 2015-2017. The total student population for the 11th grade students over the three-year cross-section was 298 students; however, the population who participated in high school athletics for this study was 128 students ( $N=128$ ). The percent of high school students eligible for free and reduced lunch (FRL) rates under the National School Lunch Act were 14% free and 6% reduced (U.S. News & World Report, 2017). FRL status was used as a proxy for SES in this study because of availability of demographic data and for its demonstrated relationship with poverty (Nicholson et al., 2014). Gender classification breakdown varied annually during the three-year cross-section ranging between 48-52% male and 48-52% female from 2015-2017. The high school was considered homogenous in race/ethnicity as 97% of students were White non-Hispanic students (National Center for Education Statistics, 2020).

Eleventh grade students were chosen for this study for two reasons. First, by the end of the 11th grade in high school, all 11th graders in this Midwestern state from 2015-2017 had one or more recorded ACT composite score(s) unless it was determined as not required under disability conditions set forth by the state's Department of Elementary and Secondary Education. Second, the 11th grade year is a critical year for planning, preparing, and applying for post-high school career plans making success by this year paramount in pursuing future plans (Barnett, 2016; Feller, 2003). Additionally, previous research in multisport participation indicated specialization was more prevalent as students progressed through high school (Post et al., 2017).

### **Measures**

#### **Demographics**

Gender, previous academic ability as measured by GPA, minority status, and FRL status were collected and utilized to control for other confounding variables to academic achievement and to better isolate the relationship of intensity and breadth of sports activities and the dependent variable, academic achievement results (Camp, 1990; Covay & Carbonaro, 2010; Feldman & Matjasko, 2005; Fredricks, 2012; Mahoney & Cairns, 1997; Marchetti et al., 2015; Whitley, 1999; Yeung, 2015). Additionally, these variables were utilized to attempt to better tease out the self-selection effects often associated with interscholastic sport participation and academic outcomes (Crosnoe, 2002). The confounding variables became covariates and produced data to identify how statistically significant their contributions were to academic achievement, both individually and as a group.

#### **Measuring Participation**

Participation in extracurricular activities is typically measured through intensity and breadth (Denault et al., 2009). While both intensity and breadth are common measures utilized in research, rarely are they both studied simultaneously (Rose-Krasnor et al., 2006). Since intensity and breadth are highly correlated, this study opted to utilize both measures of participation measurement to test for differences in student achievement outcomes (Knifsend & Graham, 2012; Neely & Vaquera, 2017; Rose-Krasnor et al., 2006). Busseri et al. (2006) recognized that involvement in a variety of types of extracurricular activities may have differing developmental outcomes for students and therefore the researcher inquired to apply similar logic to academic outcomes.

**Intensity.** Intensity was operationalized by calculating the total hours in sport for each academic school year resulting in a composite time spent figure. For example, if in a given year "Student A" participated in football, basketball, and boys' golf the researcher would add the archived season participation hours for each sport and compute a final intensity (in hours) index figure. Table 1



denotes an example of how a participation intensity index figure was operationalized and calculated. The range hours of intensity for a Lanlaur High School athlete participating as an 11th grader from 2015-2017 was 112 to 640 total hours ( $M = 315.3$ ,  $SD = 148.22$ ). The operationalization of intensity was consistent with the design of Denault et al. (2009) in which researchers utilized a composite index in hours for each participant's total participation each year.

**Breadth.** Gerber (1996) contextualized breadth of participation by the total number of sports participated in each year (Eccles & Barber, 1999; Neely & Vaquera, 2017; Rose-Krasnor et al., 2006). Since this study was an inquiry related to multisport participation each year at Lanlaur High School, the range of breadth was from one to three. Sport participation measured by breadth at Lanlaur High School for 11th grade athletes from 2015-2017 is: 38.3% ( $n = 49$ ) participated in one sport, 45.3% in two sports ( $n = 58$ ), and 16.4 % ( $n = 21$ ) in three sports.

**Measuring Academic Achievement**

Extant research has utilized GPA as a primary measure in evaluating the relationship between ESA participation and academic outcomes (Sitkowski, 2008; Watkins, 2004). However, modern critiques regarding the inconsistency of methods in determining academic viability from only one source, such as GPA, led the researcher to utilize two methods; GPA and ACT composite results (Moriana et al., 2006). The utilization of both a localized derived student achievement measure (i.e., GPA) coupled with analysis of a nationally normed standardized test (i.e., ACT) was more

holistic and appropriate as differing measures of student achievement can explain different student characteristics (Kelepolo, 2011). GPA is a more subjective multidimensional achievement measure that includes a variety of student and teacher variables such as personality and motivation (Dickinson & Adelson, 2015; Jaramillo & Spector, 2004). The ACT aims to take a more objective approach by providing insight on college readiness and content knowledge (Marchetti et al., 2015).

**The ACT exam.** The ACT has been considered a quality measure of college readiness and academic achievement and therefore served as an independent proxy of academic achievement (Bettinger et al., 2013). In this Midwestern state, all 11th graders starting in the 2014-2015 school year, as part of a required state statute, take the ACT exam in April of each school year (Helwig, 2014). Numerous students, including each year's cohort of 11th graders, had taken the ACT prior to their 11th grade year or thereafter. This study identified the highest composite score for each student in a given cohort year because the highest ACT score is what was reported for school, scholarship, and post-high school purposes. The utilization of the ACT versus other measures of academic achievement, such as GPA, was unique because ACT was not a component of participation eligibility for this Midwestern state's high school activities association's sports by-laws. In choosing ACT, the researcher aimed to avoid self-selection biases that have hindered past studies on ESA participation and academic achievement (Bohnert et al., 2010; Feldman & Matjasko, 2005; McNeal, 1995; Neely & Vaquera, 2017).

**Table 1**

**Excerpt Sample of Operationalized Student Participation Intensity Data**

Student ID #	Sport	Hours <sup>a</sup>	Sport	Hours <sup>a</sup>	Sport	Hours <sup>a</sup>	Total <sup>b</sup>
145654	Football	241	Basketball	262	Boys Golf	148	651

**Note:** Hours<sup>a</sup> = represents total hours participating per season.

Total<sup>b</sup> = represents total cumulative sports participation hours per student per academic year.

**The ACT exam** is a national assessment administered to high school students to evaluate their readiness for college (Marchetti et al., 2015). While the test consists of four components, English, Mathematics, Reading, and Science, the results are reported through a composite score ranging from 1-36. Colleges and universities traditionally utilize ACT results as a way of evaluating admission as well as the awarding of scholarships. The popularity of the ACT has grown beyond its Midwestern origin and now rivals the SAT throughout the nation for college readiness evaluation and admissions (Farrell, 2006). The credibility of the ACT has grown to the extent in which states, including the study's rural Midwestern state, have adopted the ACT as a component of the official battery of state assessments for evaluating school accountability.

**GPA (Grade Point Average).** GPA is the primary way for K-12 high schools to demonstrate individual student achievement and is one of the most studied variables in education (Kuncel et al., 2004). It is a cumulative way to represent achievement in grading periods such as quarters or semesters as well as an overall career representation. Lanlaur High School utilized a weighted GPA system in which certain college preparatory classes were weighted more significantly than the remainder of high school courses. In other words, students could enroll in courses that resulted in an A = 5 points, B = 4 points, C = 3 points, D = 2 points, and F = 1 point versus the non-weighted coursework where A = 4 points, B = 3 points, C = 2 points, D = 1 point, and F = 0 points. The weighted GPA system created an opportunity to garner a cumulative GPA greater than the traditional top of the range (4.0), and was utilized to determine class rank, valedictorian, and salutatorian for graduation purposes. The prior GPA for the sample ranged from 1.20 to 4.33 ( $M = 3.43$ ,  $SD = 0.725$ ).

### Procedure

The researcher acquired archival student data from Lanlaur High School administration and counseling department after confirmation from a university institutional review board regarding the threshold of human subject research was not met

and therefore use of secondary anonymous school data was permitted.

In order to maximize anonymity and utilize ethical data practices for research involving individual student assessment data, achievement data, and extracurricular participation the researcher relied upon anonymization by the school counselor to convert student names to student identification numbers prior to export to the researcher (Punch, 2014).

### Data Analysis

The tools utilized to collect the data were Microsoft Excel and Statistical Package for the Social Sciences (SPSS, Version 23). The analysis of data was examined by correlation, hierarchical regression, and one-way analysis of variance (ANOVA) analyses (Creswell, 2014; Field, 2013). The researcher analyzed this data with SPSS to generate descriptive statistics and quantitative results by way of correlation, hierarchical regression, and one-way ANOVA (Field, 2013).

Descriptive statistics were compiled and displayed for minority status, gender, cumulative participation hours (intensity), ACT composite results, GPA, and post-11th grade cumulative GPA. The first analysis, a correlation, was conducted between participation intensity (cumulative hours per school year) and ACT composite results. The Pearson product-moment correlation coefficient was examined for both statistical significance and strength of positive/negative correlation. The second analysis, a correlation, was conducted between participation intensity and cumulative GPA. Like the first correlation, the Pearson product-moment correlation coefficient was examined for both statistical significance and strength of positive/negative correlation.

Next, a hierarchical regression was deployed in an effort to determine whether a relationship existed between participation intensity and GPA when controlling for previous academic ability. The researcher utilized this analysis because measuring academic achievement and developmental outcomes involved many different interactions, including ESA sport participation (Bryk & Raudenbush, 1992; Feldman & Matjasko, 2005). In

addition, recent research, such as Neely and Vaquera (2017), called for future studies examining ESA sport participation and the social bond theory utilizing advanced hierarchical models. After checking for multicollinearity between independent variables, the variables were entered in two models of hierarchy. In the first model, a regression was conducted examining gender, FRL status, student identified as a minority, and prior academic achievement as independent variables and post-GPA as the dependent variable. In the second model, the previous independent variables were controlled for and ESA sport participation intensity was added. In doing so, the framework conducted two regression analyses and attempted to isolate the significance of ESA sport participation intensity.

For the final research question, the researcher utilized a one-way ANOVA to determine if a difference existed between breadth of sport participation and mean group GPA at Lanlaur High School from 2015-2017. Kelepolo (2011) and Lumpkin and Favor (2012) utilized similar one-way ANOVA analyses when examining GPA differences and extracurricular participation data. Tukey post-hoc analysis was utilized to further examine significant interaction effects (Hill, 2010). The *a priori* significance level for all analyses was set up at the  $p = .05$  level.

## Results

The disaggregated gender of the sample ( $N=128$ ) was 77 males and 51 females. Free/reduced lunch status (FRL) included 112 non-FRL students and 16 FRL students. The race/ethnicity breakdown of the sample included 122 students who identified as White non-Hispanic and six students who identified as a minority student. Previous academic ability (measured by previous 11th grade GPA) for the sample ranged from 1.20 to 4.33 ( $M = 3.43$ ,  $SD = 0.725$ ).

The academic achievement variable outcomes were analyzed for both ACT and GPA. The ACT composite range for the 2015-2017 Lanlaur High School 11th grade athlete participants sample was 10-33 ( $M = 21.1$ ,  $SD = 4.90$ ). When broken down by gender, males in the sample averaged 20.0 ( $SD = 5.48$ ) and females averaged 21.9 ( $SD = 3.77$ ) on the ACT exam, respectively. When analyzed by FRL

status, those who did not qualify for FRL averaged 21.3 ( $SD = 5.05$ ) while those students in the sample who did qualify for FRL averaged 20.0 ( $SD = 3.63$ ) on the ACT. When ACT was analyzed by minority status within the sample, non-minority students averaged 21.2 ( $SD = 4.98$ ) while minority students averaged 19.8 ( $SD = 2.48$ ).

The post-11th grade cumulative GPA for the sample ranged from 1.42-4.33 ( $M = 3.47$ ,  $SD = 0.711$ ). When broken down by gender, males in the sample averaged 3.32 ( $SD = 0.753$ ) and females averaged 3.70 ( $SD = 0.578$ ) for post-11th grade GPA. The group mean difference between gender and GPA was 0.38 and statistically significant ( $p = .002$ ). When analyzed by FRL status, those who did not qualify for FRL averaged 3.48 ( $SD = 0.719$ ) while those students in the sample who did qualify for FRL averaged 3.37 ( $SD = 0.578$ ) for their respective post-11th grade GPAs. When post-11th grade GPA was analyzed by minority status within the sample non-minority students averaged 3.50 ( $SD = 0.719$ ) while minority students averaged 3.37 ( $SD = 0.586$ ).

Results from the first correlation between participation intensity and ACT composite were not statistically significant, Pearson's  $r(126) = .098$ ,  $p = .270$ . There was no statistically significant correlation between ESA sport participation intensity and ACT for 11th grade athletes at Lanlaur High School from 2015-2017. Results from the second correlation between participation intensity and post-11th grade GPA were statistically significant ( $p < .05$ ), Pearson's  $r(126) = .195$ ,  $p = .027$ . The coefficient of determination ( $r^2 = .038$ ) meant participation intensity accounted for 3.8% of the variance in cumulative post-11th grade GPA at Lanlaur High School from 2015-2017. Results from this analysis fell within the typical one to four percent variance sports participation explains of academic outcomes in extant literature (Hanks & Eckland, 1976; Spreitzer & Snyder, 1976). In summation, there was a statistical significance between participation intensity and post-11th grade athletes' GPA at the high school from 2015-2017.

Results from the hierarchical regression analysis were not statistically or practically significant ( $p > .05$ ) between participation intensity



and post-11th grade GPA when holding constant for other known contributing factors to academic achievement which included previous academic ability, gender, minority status, and FRL status. Tests for multicollinearity indicated a very low level of multicollinearity was present ( $VIF = 1.080$  for gender,  $1.080$  for previous academic ability,  $1.078$  for FRL status, and  $1.075$  for minority status). Beta coefficients for model 1 results were: previous academic ability ( $\beta = 0.986, t = 70.463, p = .000$ ), FRL status ( $\beta = -.14, t = -.987, p = .326$ ), minority status ( $\beta = .23, t = 1.656, p = .100$ ), and gender ( $\beta = 0.009, t = 0.628, p = .531$ ). Addition of participation intensity in model 2 did not change the statistical significance of the prediction ( $R^2$  change =  $.000, F = .457, p = .501$ ) ( $R^2$  Change =  $.10; F(1, 122) = .040, p = .842$ ). The null hypothesis was accepted.

Results from the one-way ANOVA between breadth of sport participation and post-11th grade GPA were statistically significant. There was a statistically significant difference between participation breadth and GPA at the  $p < .01$  level for Lanlaur High School 11th grade athletes from 2015-2017 [ $F(2, 125) = 4.76, p = .010$ ]. Post hoc comparisons using the Tukey HSD test indicated a mean score for a breadth of one sport ( $M = 3.29, SD = .821$ ) was significantly different than a breadth of three sports ( $M = 3.84, SD = .470$ ), but a breadth of two sports ( $M = 3.51, SD = .636$ ) was not statistically

significant different from breadths of one sport and three sports.

**Discussion**

The purpose of this study was to address the gap in research related to whether measures of participation (intensity and breadth) in ESA sports activities demonstrated a relationship with academic achievement for 11th grade student athletes in a rural Midwestern high school. The findings identified by the researchers demonstrated two themes associated with sport participation measurement and academic achievement. Intensity of participation (total hours participated in athletics per school year) demonstrated a weak, but statistically significant relationship to GPA ( $p = .027$ ) and no relationship to ACT achievement. Since ACT is a standardized assessment and can be prepared for on single occasions, it perhaps captures differing academic elements of rural athletes' academic prowess. GPA in comparison, when analyzed in a cumulative fashion, tends to represent a more holistic overall academic tenacity within the high school setting. Neither intensity nor breadth demonstrated curvilinear effects to academic achievement previously noted by researchers of the "overscheduling" hypothesis (Mahoney et al., 2006). The student athletes in the study did not exhibit a threshold of participation related to decreasing academic achievement.

**Table 2**

*ANOVA Comparisons of a Rural Midwestern High School 11<sup>th</sup> Grade Athlete Breadth and GPA 2015-2017*

Group	n	Mean	SD	Tukey's HSD Comparisons		
				Breadth 1	Breadth 2	Breadth 3
Breadth 1	49	3.29	.820		.254	.008**
Breadth 2	58	3.50	.636	.254		.137
Breadth 3	21	3.84	.470	.008**	.137	

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Breadth (number of sports) participated in per year demonstrated statistically significant ( $p < .01$ ) results when analyzing differences between one, two, and three sport athletes and their respective post-11th grade GPAs. Female athletes demonstrated the largest group mean differences in GPA when categorized by breadth compared to their male counterparts.

Students who do well in school academically and behaviorally are often more likely to be motivated to participate in extracurricular activities (Fejgin, 1994; Fredricks & Eccles, 2005; McNeal, 1998; Rees & Sabia, 2010; Shulruf, 2010). Critics of positive associations between athletic participation and academic achievement propose athletics equally draws individuals who are high-achieving, determined, and goal-oriented to athletics (Spreitzer, 1994; Videon, 2002). Others argue athletics should be credited with enhancing academic achievement. Most of these arguments have lauded the non-cognitive benefits of sports, not only that it builds character, but that sports can build self-esteem, confidence, and motivation transferable to academic success (Bradley & Conway, 2016; Ferris & Finster, 2004; Olszewski-Kublius & Lee, 2004; Rishe, 2003). The researchers utilized socio-demographic factors to attempt to control for self-selection factors like Denault et al. (2009), Stevenson (2010), and Videon (2002). It should be noted that longitudinal studies are more influential than cross-sectional studies for limiting the effects of selection bias and establishing causation (Broh, 2002).

Results from this study suggest programming and potential policy recommendations for rural school leaders. First, results from this study demonstrated no observable threshold or diminishing return related to athletic participation and academic achievement measured by GPA. In fact, as breadth of sport participation increased cumulative GPA also increased. Furthermore, the linear relationship at Lanlaur High School between breadth and GPA was more apparent for females versus their male counterparts. These results suggest consideration for increased school athletic offerings for females in rural school settings.

Second, no evidence was found for increased athletic participation (measured by intensity or breadth) as being detrimental to academic achievement. Therefore, budget considerations by school districts related to academic achievement that include a reduction in athletic offerings or funding are not recommended. A reduction in athletic offerings due to financial considerations is particularly problematic in rural settings where extracurricular opportunities are less prevalent outside of the school environment. Weininger et al. (2015) found that community type affected participation by: (a) supply of opportunities, and (b) costs to participate. Covay and Carbonaro (2010) and Snellman et al. (2015) confirmed extant literature regarding inequities within athletic participation as recent findings indicated athletic participation was still largely stratified by socioeconomic factors. Schools have a history of offering school sports to help mitigate the impact of parent resources (Bennett et al., 2012). Marsh and Kleitman (2002) found when considering demographic variables and academic achievement, socioeconomic factors were the most consistent interactions; thus, highlighting a prioritized necessity for rural schools to maintain and promote ESA opportunities. ESA opportunities to support students' mental and physical health, academic achievement, and social and cultural capital when contextually other such supports may be more isolated in availability (Edwards et al., 2013).

Lastly, benefits for ESA school sport participation have evolved beyond original notions related to positive associations noted by Coleman (1961) and later by Jordan and Nettles (1999) where ESA sport participation served as a structured activity placeholder in lieu of unstructured and/or unsupervised time. A shift in contemporary research versus the classical deficit-reduction paradigm is known as the positive youth development (PYD) paradigm (Bradley & Conway, 2016; Forneris et al., 2015). ESA sport participation has demonstrated developmental and academic gains through the acquisition of social and cultural capital provided by peers, coaches, teachers, and other extra-familial adults' association with ESA sports (Broh, 2002; Mahoney et al., 2006; Marsh & Kleitman, 2002; McNeal, 1995).

Limitations of this study were particularly related to the anecdotal nature of a cross-section study (Broh, 2002). Results from this study cannot be conflated to any other rural school district in the Midwest or the United States. The demographics of the rural Midwestern high school were homogenous in both SES and racial identity. A final limitation of this study was associated with self-selection, or selection bias, related to the voluntary nature of students choosing to participate in interscholastic athletics. Interscholastic athletes are not a random cross-section of the average high school student (Yeung, 2015). Additionally, in order to be eligible to participate in interscholastic athletics, Lanlaur High School students would need to be considered a bona fide student by the eligibility guidelines set forth by the state athletic association and the high school. State athletic association eligibility guidelines were set forth requiring students to meet minimum academic, behavioral, and residency guidelines to participate in interscholastic activities under the auspices of the state association. The study was delimited to ESA sports versus all school-sanctioned activities, clubs, and organizations. Lanlaur High School co-curricular activities such as band and chorus were not included in this study because they were: (a) not confined to a “season” thus skewing intensity, and (b) not congruent because part of their participation is tied to instruction and required attendance during the school day.

### Implications for Future Research and Practice

#### Research

The results of this study indicated that ESA sports share a statistically significant relationship with academic achievement when measured by breadth and GPA in a rural Midwestern high school setting. Implications for secondary rural school academic and student participation were noted. Future research is recommended to assess gender differences related to multisport participation and academic achievement in varied rural school contexts. In addition, a qualitative inquiry is recommended to test the application of the social bond theory to the breadth of sports participation and academic achievement outcomes. Additionally, a mixed-methods analysis to examine the combined

effects of ESA and out-of-school athletic participation differences related to participation and academic achievement (Cooper et al., 1999).

#### Practice

Rural school leaders should seek to provide diverse ESA offerings where possible to mitigate inequities of participation related to SES (Lang, 2021). ESAs offer low costs for participation, less time commitments, and reduced needs for privatized transportation than their out-of-school activity counterparts (Glover, 1999; Guèvremont et al., 2014). In addition, when budgetary decisions threaten the vitality of the diversity of rural ESA offerings school leaders should consider community or regional partnerships, including cooperatives, to maintain ESA opportunities (Kellstedt, 2021; Lang, 2021; Porter, 2016). In conjunction with maintaining diverse ESA offerings school leaders should also consider traditional barriers to participation not frequently examined related to regional norms, culture, and race/ethnicity. The theme of high school students working a job while attending school is a common inhibitor for rural ESA participation. Many high school students are compelled to work outside of school hours to supplement family income stemming from financial hardships or ramifications related to the COVID-19 pandemic (Coulangeon, 2018; White & Gager, 2007). Further complicating rural ESA participation and out-of-school employment are cultural norms. Cuadros (2006) highlighted in *A Home on The Field*, how Latino families in rural North Carolina emphasized securing employment defined who a person was and thus created cultural dilemmas for high schools and potential participants in rural ESAs. Assessing rural school ESA offerings which could be modified to accommodate the localized needs of students to maintain or increase participation is a worthy endeavor for 21st century rural school leaders.

School leaders have an opportunity to utilize innovate hiring practices to consider how to attract, retain, and compensate teachers who can not only excel in the classroom, but apply their instructional and relationship strengths to ESA opportunities. Considering United States teacher shortages, rural schools should aim to highlight the strengths of

teaching and sponsoring ESA activities in rural schools. Furthermore, rural schools should provide innovative professional development for teachers which promotes and incentivizes multi-faceted school roles, including ESA sponsorship (Aragon, 2016; Tran et al., 2020).

School leaders are presented with ample justification for heightened focus on ESAs and academic achievement considering the extant benefits rural ESAs provide rural students through the accumulation of social and cultural capital by the solidification of social bonds. Customizing the ESA program for the localized rural context, maximizing collaborative opportunities for ESA sustainability, and hiring and retaining quality teachers and ESA sponsors, are both feasible and imperative for the continued legacy of ESAs in rural school communities.

### References

- Adler, P. A., & Adler, P. (1994). Social reproduction and the corporate other: The institutionalization of afterschool activities. *Sociological Quarterly*, 35(2), 309–328. <https://doi.org/10.1111/j.1533-8525.1994.tb00412.x>
- Aragon, S. (2016). Teacher shortages: What we know. Education Commission of the States. <http://www.ecs.org/ec-content/uploads/Teacher-Shortages-What-WeKnow.pdf>
- Assouline, S. G., Ihrig, L. M., & Mahatmya, D. (2017). Closing the excellence gap: Investigation of an expanded talent search model for student selection into an extracurricular STEM program in rural middle schools. *Gifted Child Quarterly*, 61(3), 250–261. <https://doi.org/10.1177/0016986217701833>
- Baker, J., Cobley, S., & Fraser-Thomas, J. (2009). What do we know about early sport specialization? Not much! *High Ability Studies*, 20(1), 77–89. <https://doi.org/10.1080/13598130902860507>
- Barnett, E. (2016). *Building momentum from high school into college*. Jobs for the Future. ERIC (ED564836). <https://eric.ed.gov/?id=ED564836>
- Bartkus, K. R., Nemelka, B., Nemelka, M., & Gardner, P. (2012). Clarifying the meaning of extracurricular activity: A literature review of definitions. *American Journal of Business Education*, 5(6), 693–704. <https://doi.org/10.19030/ajbe.v5i6.7391>
- Bell, D. R., Post, E. G., Trigsted, S. M., Hetzel, S., McGuine, T. A., & Brooks, M. A. (2016). Prevalence of sport specialization in high school athletics: A 1-year observational study. *The American Journal of Sports Medicine*, 44(6), 1469–1474. <https://doi.org/10.1177/0363546516629943>
- Bell, D. R., Post, E. G., Trigsted, S. M., Schaefer, D. A., McGuine, T. A., Watson, A. M., & Brooks, M. A. (2018). Sport specialization characteristics between rural and suburban high school athletes. *Orthopaedic Journal of Sports Medicine*. <https://doi.org/10.1177/2325967117751386>
- Bennett, P. R., Lutz, A. C., & Jayaram, L. (2012). Beyond the schoolyard: The role of parenting logics, financial resources, and social institutions in the social class gap in structured activity participation. *Sociology of Education*, 85(2), 131–157. <https://doi.org/10.1177/0038040711431585>
- Bettinger, E. P., Evans, B. J., & Pope, D. G. (2013). Improving college performance and retention the easy way: Unpacking the ACT exam. *American Economic Journal: Economic Policy*, 5(2), 26–52. <https://doi.org/10.1257/pol.5.2.26>
- Bohnert, A., Fredricks, J., & Randall, E. (2010). Capturing unique dimensions of youth organized activity involvement: Theoretical and capturing unique dimensions of youth organized activity involvement. *Review of Educational Research*, 80(4), 576–610. <https://doi.org/10.3102/0034654310364533>
- Bradley, J. L., & Conway, P. F. (2016). A dual step transfer model: Sport and non-sport extracurricular activities and the enhancement of academic achievement. *British Educational Research Journal*, 42(4), 703–728. <http://doi.org/10.1002/berj.3232>
- Broh, B. A. (2002). Linking extracurricular programming to academic achievement: Who benefits and why? *Sociology of Education*, 75(1), 69–95. <https://doi.org/10.2307/3090254>



- Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods*. Sage.
- Busseri, M. A., Rose-Krasnor, L., Willoughby, T., & Chalmers, H. (2006). A longitudinal examination of breadth and intensity of youth activity involvement and successful development. *Developmental Psychology, 42*(6), 1313–1326. <https://doi.org/10.1037/0012-1649.42.6.1313>
- Camp, W. G. (1990). Participation in student activities and achievement: A covariance structural analysis. *Journal of Educational Research, 83*(5), 272–278. <https://doi.org/10.1080/00220671.1990.10885969>
- Coakley, J. (2010). The “logic” of specialization: Using children for adult purposes. *Journal of Physical Education, Recreation & Dance, 81*(8), 16–25. <https://doi.org/10.1080/07303084.2010.10598520>
- Coleman, J. S. (1961). *The adolescent society*. Free Press.
- Cooper, H., Valentine, J. C., Nye, B., & Lindsay, J. J. (1999). Relationships between five after-school activities and academic achievement. *Journal of Educational Psychology, 91*(2), 369–378. <https://doi.org/10.1037/0022-0663.91.2.369>
- Coulangeon, P. (2018). The impact of participation in extracurricular activities on school achievement of French middle school students: Human capital and cultural capital revisited. *Social Forces, 97*(1), 55-90.
- Covay, E., & Carbonaro, W. (2010). After the bell: Participation in extracurricular activities, classroom behavior, and academic achievement. *Sociology of Education, 83*(1), 20–45. <https://doi.org/10.1177/0038040709356565>
- Cuadros, P. (2006). *A home on the field*. HarperCollins.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed method approaches*. Sage.
- Crosnoe, R. (2002). Academic and health-related trajectories in adolescence: The intersection of gender and athletics. *Journal of Health and Social Behavior, 43*(3), 317–335. <https://doi.org/10.2307/3090207>
- Darling, N., Caldwell, L. L., & Smith, R. (2005). Participation in extracurricular activities and adolescent adjustment. *Journal of Youth and Adolescence, 34*(5), 493–505. <https://doi.org/10.1007/s10964-005-7266-8>
- Denault, A.-S., Poulin, F., & Pedersen, S. (2009). Intensity of participation in organized youth activities during the high school years: Longitudinal associations with adjustment. *Applied Developmental Science, 13*(2), 74–87. <https://doi.org/10.1080/10888690902801459>
- Dickinson, E. R., & Adelson, J. L. (2015). Choosing among multiple achievement measures: Applying multitrait-multimethod confirmatory factor analysis to state assessment, ACT, and student GPA data. *Journal of Advanced Academics, 27*(1), 4-22. <https://doi.org/10.1177/1932202X15621905>
- DiMaggio, P. (1982). Cultural capital and school success: The impact of status culture participation on the grades of U.S. high school students. *American Sociological Review, 47*(2), 189-201. <https://doi.org/10.2307/2094962>
- Eccles, J. S., & Barber, B. L. (1999). Student council, volunteering, basketball, or marching band: what kind of extracurricular involvement matters? *Journal of Adolescent Research, 14*(1), 10–43. <https://doi.org/10.1177/0743558499141003>
- Eccles, J. S., & Gootman, J. A. (Eds.). (2002). *Community programs to promote youth development*. National Academy Press.
- Edwards, M. B., Bocarro, J. N., & Kanters, M. A. (2013). Place disparities in supportive environments for extracurricular physical activity in North Carolina middle schools. *Youth & Society, 45*(2), 265–285. <https://doi.org/10.1177/0044118X11416677>
- Farrell, E. F. (2006). The national ACT score average rises as the test's popularity grows. *Chronicle of Higher Education, 53*(2), A64.
- Feeley, B. T., Agel, J., & LaPrade, R. F. (2016). When is it too early for single sport specialization? *The American Journal of Sports Medicine, 44*(1), 234-241. <https://doi.org/10.1177/0363546515576899>



- Fejgin, N. (1994). Participation in high school competitive sports: A subversion of school mission or contribution to academic goals? *Journal of Social Sport*, 11(3), 211–230. <https://doi.org/10.1123/SSJ.11.3.211>
- Feldman, A. F., & Matjasko, J. L. (2005). The role of school-based extracurricular activities in adolescent development: A comprehensive review and future directions. *Review of Educational Research*, 75(2), 159–210. <https://doi.org/10.3102%2F00346543075002159>
- Feller, B. (2003, Sept 7). Penultimate year of high school is pivotal. *The Washington Post*. [https://www.washingtonpost.com/archive/politics/2003/09/07/penultimate-high-school-year-is-pivotal/38c43686-33ae-4c57-b21a-3d471ad19f0/?utm\\_term=.a3b65399dc1d](https://www.washingtonpost.com/archive/politics/2003/09/07/penultimate-high-school-year-is-pivotal/38c43686-33ae-4c57-b21a-3d471ad19f0/?utm_term=.a3b65399dc1d)
- Ferris, E., & Finster, M. (2004). Academic fit of student-athletes: An analysis of NCAA Division I graduation rates. *Research in Higher Education*, 45(6), 555–577. <https://doi.org/10.1023/B:RIHE.0000040263.39209.84>
- Field, A. P. (2013). *Discovering statistics using IBM SPSS statistics: And sex and drugs and rock 'n' roll*. Sage.
- Finn, C. (1989). Withdrawing from school. *Review of Educational Research*, 59, 117–142. <https://doi.org/10.2307/1170412>
- Forneris, T., Camiré, M., & Williamson, R. (2015). Extracurricular activity participation and the acquisition of developmental assets: Differences between involved and noninvolved Canadian high school students. *Applied Developmental Science*, 19(1), 47–55. <https://doi.org/10.1080/10888691.2014.980580>
- Fredricks, J. A. (2012). Extracurricular participation and academic outcomes: Testing the over-scheduling hypothesis. *Journal of Youth and Adolescence*, 41(3), 295–306. <https://doi.org/10.1007/s10964-011-9704-0>
- Fredricks, J. A., & Eccles, J. S. (2005). Developmental benefits of extracurricular involvement: Do peer characteristics mediate the link between activities and youth outcomes? *Journal of Youth and Adolescence*, 34, 507–520. <https://doi.org/10.1007/s10964-005-8933-5>
- Gerber, S. B. (1996). Extracurricular activities and academic achievement. *Journal of Research and Development in Education*, 30(1), 42–50.
- Glover, C. (1999). Intramural sports: Intramural and non-competitive athletics can reach out to more students and be more cost-effective than interscholastic athletics. *Schools in the Middle*, 9(2), 30–33.
- Guèvremont, A., Findlay, L., & Kohen, D. (2014). Organized extracurricular activities: are in-school and out-of-school activities associated with different outcomes for Canadian youth? *The Journal of School Health*, 84(5), 317–325. <https://doi.org/10.1111/josh.12154>
- Haddix, J. (2015, October 13). *Growth of non-school sports leads to fewer multi-sport athletes*. National Federation of State High School Associations. <https://nfhs.org/articles/growth-of-non-school-sports-leads-to-fewer-multi-sport-athletes/>
- Hanks, M. P., & Eckland, B. K. (1976). Athletics and social participation in the educational attainment process. *Sociology of Education*, 49, 271–94. <https://doi.org/10.2307/2112314>
- Hansen, D. M., Larson, R. W., & Dworkin, J. B. (2003). What adolescents learn in organized youth activities: A survey of self-reported developmental experiences. *Journal of Research on Adolescence*, 13(1), 25–55. <https://doi.org/10.1111/1532-7795.1301006>
- Helwig, S. (2014, May 29). *CCR-14-008 – ACT® statewide test administration*. *Administrative memo*. Missouri Department of Elementary and Secondary Education. <https://dese.mo.gov/sites/default/files/am/documents/CCR-14-008.pdf>
- Hill, R. E. (2010). *Extracurricular activities: An examination of student achievement in the Lee's Summit school district* (Unpublished doctoral dissertation, Baker University). [https://www.bakeru.edu/images/pdf/SOE/EdD-Theses/Hill\\_Rexanne.pdf](https://www.bakeru.edu/images/pdf/SOE/EdD-Theses/Hill_Rexanne.pdf)
- Hirschi, T. (1969). *Causes of delinquency*. University of California Press.
- Holland, A., & Andre, T. (1987). Participation in extracurricular activities in secondary school: What is known, what needs to be known? *Review of Educational Research*, 57(4), 437–

466.  
<https://doi.org/10.3102/00346543057004437>  
 Jaramillo, F., & Spector, P. (2004). The effect of action orientation on the academic performance of undergraduate marketing majors. *Journal of Marketing Education, 26*(3), 250-260.  
<https://doi.org/10.1177/0273475304268780>
- Jayanthi, N., Pinkham, C., Dugas, L., Patrick, B., & LaBella, C. (2013). Sports specialization in young athletes: Evidence-based recommendations. *Sports Health: A Multidisciplinary Approach, 5*(3), 251-257.  
<https://doi.org/10.1177/1941738112464626>
- Jordan, W. J., & Nettles, S. M. (1999). How students invest their time outside of school: Effects on school-related outcomes. *Social Psychology of Education: An International Journal, 3*(4), 217-243.  
<https://doi.org/10.1023/A:1009655611694>
- Kelepolo, E. N. (2011). *The relationship between participation in extracurricular activities and Utah's proficiency assessments of students in a suburban school district* (Doctoral dissertation, University of Nevada, Las Vegas).  
<http://digitalscholarship.unlv.edu/thesesdissertations>
- Kellstedt, D. K., Schenkelberg, M. A., Essay, A. M., Seggern, M. J., Rosenkranz, R., Welk, G., High, R., & Dziewaltowski, D. (2021). Youth sport participation and physical activity in rural communities. *Archives of Public Health, 79*(1), 1-8. <https://doi.org/10.21203/rs.3.rs-141406/v1>
- Kelto, A. (2015, September 4). How likely is it, really, that your athletic kid will turn pro? <http://www.npr.org/sections/health-shots/2015/09/04/432795481/how-likely-is-it-really-that-your-athletic-kid-will-turn-pro>
- Knifsend, C. A., & Graham, S. (2012). Too much of a good thing? How breadth of extracurricular participation relates to school-related affect and academic outcomes during adolescence. *Journal of Youth and Adolescence, 41*(3), 379-389. <http://doi.org/10.1007/s10964-011-9737-4>
- Kuncel, N. R., Credé, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of literature. *Review of Educational Research, 75*(1), 63-82.  
<https://doi.org/10.3102/00346543075001063>
- Lang, C. (2021). Extracurricular activities can play a central role in K-12 education. *Phi Delta Kappan, 102*(8), 14-19.  
<https://doi.org/10.1177/00317217211013931>
- Lumpkin, A. & Favor, J. (2012). Comparing the academic performance of high school athletes and non-athletes in Kansas in 2008-2009. *Journal of Sport Administration & Supervision, 4*(1), 41-62.  
<http://hdl.handle.net/2027/spo.6776111.0004.108>
- Luthar, S. S., & Sexton, C. (2004). The high price of affluence. In R. V. Kail (Ed.), *Advances in Child Development, 32*, (pp. 126-162), Academic Press.
- Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology, 33*(2), 241-253. <https://doi.org/10.1037/0012-1649.33.2.241>
- Mahoney, J. L., Harris, A. L., & Eccles, J. S. (2006). Organized activity participation, positive youth development, and the over-scheduling hypothesis. *Society for Research in Child Development: Social Policy Report, 20*, 1-30. <http://dx.doi.org/10.1002/j.2379-3988.2006.tb00049.x>
- Marchetti, R., Wilson, R. H., & Dunham, M. (2016). Academic achievement and extracurricular school activities of at-risk high school students. *Educational Research Quarterly, 39*(4), 3-20.
- Marsh, H. W. (1992) Extracurricular activities: Beneficial extension of the traditional curriculum or subversion of academic goals? *Journal of Educational Psychology, 84*(4), 553-562. <https://doi.org/10.1037/0022-0663.84.4.553>
- Marsh, H., & Kleitman, S. (2002). Extracurricular school activities: The good, the bad, and the nonlinear. *Harvard Educational Review, 72*(4), 464-514.  
<https://doi.org/10.17763/HAER.72.4.051388703V7V7736>
- McNeal, R. B. (1995). Extracurricular activities and high school dropouts. *Sociology of Education, 68*(1), 62-80. <https://doi.org/10.2307/2112764>

- McNeal, R. B. (1998). High school extracurricular activities: Closed structures and stratifying patterns of participation. *The Journal of Educational Research*, 9, 183–191. <https://doi.org/10.1080/00220679809597539>
- Melnick, M. J., Sabo, D. F., & Vanfossen, B. (1992). Educational effects of interscholastic athletic participation on African-American and Hispanic youth. *Adolescence*, 27(106), 295–308. <https://doi.org/10.1177/101269029202700104>
- Moore, K. A., Murphey, D., Bandy, T., & Cooper, M. (2014). *Participation in out-of-school time activities and programs*. Research Brief. Publication# 2014-13. *Child Trends*. <https://www.childtrends.org/wp-content/uploads/2014/03/2014-13OutOfSchoolActivities1.pdf>
- Moriana, J. A., Alcala, A. R., Pino, J. J., & Ruiz, R. (2006). Extracurricular activities and academic performance in secondary students. *Journal of Research in Educational Psychology*, 8(4), 35–46.
- Myer, G. D., Jayanthi, N., DiFiori, J. P., Faigenbaum, A. D., Kiefer, A. W., Logerstedt, D., & Micheli, L. J. (2016). Sports specialization, part II: Alternative solutions to early sport specialization in youth athletes. *Sports Health: Multidisciplinary Approach*, 8(1), 65–73. <https://doi.org/10.1177/1941738115614811>
- National Center for Education Statistics (2020). ACS-ED district demographic dashboard 2014–18. <https://nces.ed.gov/Programs/Edge/ACSDashboard/2918220>
- Neely, S. R., & Vaquera, E. (2017). Making it count: Breadth and intensity of extracurricular engagement and high school dropout. *Sociological Perspectives*, 1–24. <https://doi.org/10.1177/0731121417700114>
- Niehoff, K. (2020, September 02). *While total 2019-20 participation is unavailable, high school football shows promising results*. National Federation of State High School Associations. <https://www.nfhs.org/articles/while-total-2019-20-participation-is-unavailable-high-school-football-shows-promising-results/>
- Nicholson, L. M., Slater, S. J., Chriqui, J. F., & Chaloupka, F. (2014). Validating adolescent socioeconomic status: Comparing school free or reduced priced lunch with community measures. *Spatial Demography*, 2, 55–65. <https://doi.org/10.1007/BF03354904>
- National Collegiate Athletic Association (NCAA). (2020). Estimated probability of competing in professional athletics. <https://www.ncaa.org/about/resources/research/estimated-probability-competing-professional-athletics>
- Olszewski-Kublius, P., & Lee, S.Y. (2004). The role of participation in in-school and out-of-school activities in the talent development of gifted students. *Journal of Secondary Gifted Education*, 15(3), 107–124. <https://doi.org/10.4219/jsge-2004-454>
- Osgood, D. W., Wilson, J. K., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1996). Routine activities and individual deviant behavior. *American Sociological Review*, 61(4), 635–655. <https://doi.org/10.2307/2096397>
- Peguero, A. A., Ovink, S. M., & Li, Y. L. (2015). Social bonding to school and educational inequality: Race/ethnicity, dropping out, and the significance of place. *Sociological Perspectives*, 59(2), 317–344. <https://doi.org/10.1177/0731121415586479>
- Porter, C. (2016, May 17). *Cooperative programs keep athletics alive for small schools*. National Federation of State High School Associations. <https://nfhs.org/articles/cooperative-programs-keep-athletics-alive-for-small-schools/>
- Punch, K. (2014). *Introduction to social research: Quantitative & qualitative approaches*. Sage.
- Rees, D. I., & Sabia, J. J. (2010). Sports participation and academic performance: Evidence from the National Longitudinal Study of Adolescent Health. *Economics of Education Review*. <https://doi.org/10.1016/j.econedurev.2010.04.008>
- Rishe, P. J. (2003). A reexamination of how athletic success impacts graduation rates: Comparing student athletes to all other undergraduates. *American Journal of*

- Economics and Sociology*, 62(2), 407-421.  
<https://doi.org/10.1111/1536-7150.t01-2-00006>
- Rose-Krasnor, L., Busseri, M. A., Willoughby, T., & Chalmers, H. (2006). Breadth and intensity of youth activity involvement as contexts for positive development. *Journal of Youth and Adolescence*, 35(3), 365–379.  
<https://doi.org/10.1007/s10964-006-9037-6>
- Sharp, E. H., Tucker, C. J., Baril, M. E., Van Gundy, K. T., & Rebellon, C. J. (2015). Breadth of participation in organized and unstructured leisure activities over time and rural adolescents' functioning. *Journal of Youth and Adolescence*, 44(1), 62–76.  
<http://doi.org/10.1007/s10964-014-0153-4>
- Showalter, D., Klein, R., Johnson, J., & Hartman, S. (2017). *Why rural matters 2015-2016: Understanding the changing landscape*. Rural School and Community Trust.  
<https://files.eric.ed.gov/fulltext/ED590169.pdf>
- Shulruf, B. (2010). Do extra-curricular activities in schools improve educational outcomes? A critical review and meta-analysis of the literature. *International Review of Education*, 56(5/6), 591–612.  
<https://doi.org/10.1007/s11159-010-9180-x>
- Sitkowski, L. S. (2008). *The effects of participation in athletics on academic performance among high school sophomores and juniors* (Doctoral dissertation, Liberty University). ProQuest. Dissertations and Theses database. (UMI No. 3311365).  
<https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=1115&context=doctoral>
- Smith, M. M. (2015). Early sport specialization: A historical perspective early days of sport specialization. *Kinesiology Review*, 4(3), 220–229. <https://doi.org/10.1123/kr.2015-0024>
- Snellman, K., Silva, J. M., Frederick, C. B., & Putnam, R. D. (2015). The engagement gap: Social mobility and extracurricular participation among American youth. *The ANNALS of the American Academy of Political and Social Science*, 657(1), 194–207.  
<http://doi.org/10.1177/0002716214548398>
- Spreitzer, E. (1994). Does participation in interscholastic athletics affect adult development? A longitudinal analysis of an 18–24 age cohort. *Youth and Society*, 25, 368–387.  
<https://doi.org/10.1177/0044118X94025003004>
- Spreitzer, E. & Snyder, E. E. (1976). Socialization into sport. *Research Quarterly*, 47(2), 238–245.  
<https://doi.org/10.1080/10671315.1976.10615367>
- Stearns, E., & Glennie, E. J. (2010). Opportunities to participate: Extracurricular activities' distribution across and academic correlates in high schools. *Social Science Research*, 39(2), 296–309.  
<https://doi.org/10.1016/j.ssresearch.2009.08.001>
- Stevenson, B. (2010). Beyond the classroom: Using Title IX to measure the return to high school sports. *The Review of Economics and Statistics*, 92(2), 284–301.  
<https://doi.org/10.1162/rest.2010.11623>
- Tavani, C. M., & Losh, S. C. (2003). Motivation self-confidence, and expectations as predictors of the academic performances among our high school students. *Child Study Journal*, 33(3), 141–151.
- Tran, H., Hardie, S., Gause, S., Moyi, P., & Ylimaki, R. (2020). Leveraging the perspectives of rural educators to develop realistic job previews for rural teacher recruitment and retention. *Rural Educator*, 41(2), 31-46.  
<https://doi.org/10.35608/ruraled.v41i2.866>
- U.S. News and World Report. (2017). *High school rankings*.  
<https://www.usnews.com/education/best-high-schools/missouri/districts/>
- Videon, T. M. (2002). Who plays and who benefits: Gender, interscholastic athletics, and academic outcomes. *Sociological Perspectives*, 45(4), 415–444.  
<https://doi.org/10.1525/sop.2002.45.4.415>
- Watkins, A. B. (2004). *The effects of participation in extracurricular activities on the mean grade point average of high school students in a rural setting* [Doctoral dissertation, University of Tennessee, Knoxville]. ProQuest Dissertations and Theses Database. (UMI 3148314).  
[https://trace.tennessee.edu/cgi/viewcontent.cgi?article=6303&context=utk\\_graddiss](https://trace.tennessee.edu/cgi/viewcontent.cgi?article=6303&context=utk_graddiss)

- Weininger, E. B., Lareau, A., & Conley, D. (2015). What money doesn't buy: Class resources and children's participation in organized extracurricular activities. *Social Forces*, 94(2), 479–503. <https://doi.org/10.1093/sf/sov071>
- White, A. M., & Gager, C. T. (2007). Idle hands and empty pockets? Youth involvement in extracurricular activities, social capital, and economic status. *Youth & Society*, 39(1), 75–111. <https://doi.org/10.1177/0044118X06296906>
- Whitley, R. L. (1999). Those “dumb jocks” are at it again: A comparison of educational performances of athletes and nonathletes in North Carolina high schools from 1993 through 1996. *The High School Journal*, 82(4), 223–233.
- Yeung, R. (2015). Athletics, athletic leadership, and academic achievement. *Education and Urban Society*, 47(3), 361–387. <https://doi.org/10.1177/0013124513495277>

### About the Authors

**Chad Lang, EdD**, is the Director of School Improvement and Human Resources at Glenwood Community School District in Glenwood, Iowa. Prior to school administration he was a teacher, coach, assistant principal, and activities director. In 2018, Dr. Lang was selected as the Missouri Athletic Director of the Year by the MIAAA. His research interests are school improvement, extracurricular activities, and grading and assessment in PK-12 settings. He has presented at various state school administration and leadership conferences and has been recently published in *Phi Delta Kappan*. [chadmichaellang@gmail.com](mailto:chadmichaellang@gmail.com)

**Tyler Tapps, PhD**, is currently a Fellow for Institutional Strategy and Assistant Director in the School of Health Science and Wellness at Northwest Missouri State University. He publishes regularly in a variety of journals and has authored or co-authored five books and more than 35 peer reviewed works. In 2017, he was awarded the “Faculty Excellence Award for Scholarship”. In 2014, Dr. Tapps received the honor of being inducted by the Oklahoma Health Association as the state’s first ever “Research Fellow” for his multiple research and grant projects to enhance the health and wellness of the residents of Oklahoma, and in 2020 was recognized as the “Outstanding Faculty Member” award winner by Northwest Missouri State University Leadership. [tytapps@nwmissouri.edu](mailto:tytapps@nwmissouri.edu)