



RESEARCH

OPTIMIZING STUDENT LEARNING OUTCOMES OF COLLEGIATE RECREATIONAL SPORTS PARTICIPATION

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ABSTRACT

Higher education theorists have long since proposed student involvement in educational programs is directly proportional to student learning (Astin, 1999), neglecting potential non-linear relationships. The purpose of this study is to determine the presence of non-linear relationships between collegiate recreational sports (CRS) participation and student learning outcomes. Data from the NASPA Assessment and Knowledge Consortium were analyzed through ordinary least squares multiple regression to determine if there is a point of diminishing returns in student learning outcomes of CRS participation. The results demonstrate a significant curvilinear relationship for depth and breadth of CRS participation, supporting a point of diminishing returns. The point of diminishing returns in student learning outcomes occurs at a CRS participation frequency of 8 times per week and number of different CRS activities of 30 activities per week. These findings have implications for CRS programming, marketing, and mentoring.

Keywords: recreational sport; student development; learning outcomes; diminishing return

INTRODUCTION

THE COLLEGE EXPERIENCE PROVIDES A DIVERSE ARRAY OF OPPORTUNITIES for students to get involved in both in-class and co-curricular education programs and activities. When considering the evolution of student involvement on college campuses in the United States (U.S.), we saw an increase in involvement in the 1700s, which has continued through the 21st century (Moore, Lovell, McGann, & Wyrick, 1998). The breadth of student involvement has expanded the context of education to incorporate both inside and outside classroom experiences with a resulting emphasis on the “whole student.” Co-curricular programs enrich student learning through experiences designed to develop students’ knowledge and skills in areas such as decision making and problem solving, teamwork, leadership, adaptability, and civic engagement (Stirling & Kerr, 2015). Engagement in co-curricular programs is widely-recognized as complementary to academic curriculum (Stirling & Kerr, 2015), with research demonstrating significantly greater gains in personal and social development among students engaged in co-curricular experiences compared to non-participants (Turrentine, Esposito, Young, & Ostroth, 2012).

The literature cites *student outcomes* as the result, positive or negative, attributed to involvement in education programs (NIRSA, 2008). Student learning outcomes demonstrate what students should be able to do following involvement in an education program (Cooper, Flood, & Gardner, 2009). With respect to the college experience, students achieve a variety of learning outcomes dependent on the distinct educational activities they are involved in. As a whole, student learning has multiple dimensions (i.e., physiological, social, emotional, and cognitive), and occurs throughout and across the college experience (Fried, 2006). When examining student learning broadly, consideration of diverse learning outcomes is appropriate.

In the 1980s, reform efforts advocated for higher education to prioritize student learning, admonishing the large research institutions perceived as straying from this focus (Komives & Schoper, 2006). The student outcomes movement grew, in response to education reform, with higher education expanding their examination of student outcomes to incorporate out-of-class co-curricular activities (Komives & Schoper, 2006; NIRSA, 2008). The current emphasis on student learning outcomes is largely fueled by the university accreditation process and increasingly tighter budgets, calling for greater accountability among educational programs and administrators (Cooper et al., 2009; Komives & Schoper, 2006; Moore et al., 1998). While there is an increasing focus on research examining learning outcomes outside the classroom (Keeling, 2006), scholarship in this area still lags, what is known about classroom learning (Moore et al., 1998; Pascarella & Terenzini, 2005). To understand how to develop the “whole student,” an examination of student service programs is essential.

Unfortunately, the increase in co-curricular experiences through education reform efforts can also lead to an over-scheduled student. As Harvard Magazine describes, “Students today sprint through jam-packed daily schedules, tackling big servings of academic work plus giant helpings of extracurricular activity in a frenetic tizzy of commitments” (Lambert, 2010). Higher education literature calls campus administrators to provide structural and advisor support for students’ co-curricular involvements and challenges with time management and work-life balance (McNeil, 2017). A greater understanding of the relationship between co-curricular involvements and student outcomes will inform practitioners’ programming and support to optimize student development. A prominent outlet for co-curricular experiences (educational programs outside the classroom) is collegiate recreational sports (CRS). Students can engage in a diverse array of activities facilitated by the CRS department, including: group fitness, intramural sports, sports clubs, and outdoor recreation (Lower, Turner, & Petersen, 2015).

With an estimated 8.1 million students involved in CRS across the U.S. (NIRSA, n.d.), collegiate recreation represents a prominent co-curricular activity occupying students’ time. The purpose of this study is to determine the point of diminishing returns with respect to student learning outcomes from participating in CRS. Given the scarcity of resources to invest in the student experience and increased expectations of university accountability (Bowman & Trolian, 2017; U.S. Department of Education, 2006), accurate information about the effects of student services – such as CRS – can enhance campus administrators’ strategic planning, budgeting, and targeted efforts to develop the “whole student.” In light of the fine line between optimal student involvement and the over-scheduled student, the guiding research question for the study is: *Are there non-linear relationships between CRS participation (depth; breadth) and student learning outcomes, such that positive relationships will diminish with greater levels of involvement?*

LITERATURE REVIEW

Higher education theorists cite student involvement, engagement, and integration as established theories and constructs associated with student learning outcomes (Wolf-Wendel, Ward, & Kinzie, 2009). Research demonstrates the time and energy students devote to educational programs and activities is the best predictor of student learning and development (Pascarella & Terenzini, 2005). When considering the conceptualization of student time and energy, the *involvement*, *engagement*, and *integration* constructs are often used interchangeably, with no clear distinction (Wolf-Wendel et al., 2009). Distinguishing the constructs, Kuh (2001; 2009) asserts *involvement* focuses on student behavior, while *engagement* incorporates institutional efforts to induce students to participate in education programs. *Integration* is a separate theory, emphasizing shared normative values (Tinto, 1993; Wolf-Wendel et al., 2009).

Higher education theorists acknowledge the complexity of student *involvement*, *engagement*, and *integration*, identifying a multitude of factors that enhance or inhibit student behaviors, supports, and values. In addition to university administrators, Zepke and Leach (2010) identify “locations, structures, cultures, technologies, buildings and equipment” as primary actants influencing student *engagement*, which are often unaccounted for in empirical research. Further, scholarship examining student involvement has often imposed a monolithic view of students, “devoid of issues of race/ethnicity, culture, gender, politics, and identity” (p. 130). While this study is not intended to address socio-cultural issues in higher education, the researchers seek to account for students from diverse backgrounds by integrating intrapersonal factors that may influence the student experience within the research design (see Methods).

Student Involvement

When considering the higher education theories conceptualizing student time and energy, a socio-ecological framework would suggest scholarship start at the intrapersonal level (*involvement* – student behaviors) prior to expanding to the interpersonal (*integration* – shared values) and community (*engagement* – institutional involvement) levels (Bronfenbrenner, 1994). Astin (1999) defines student involvement as “the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). Astin’s Theory of Student Involvement makes five claims: 1) student involvement reflects physical and psychological energy expended within an education program; 2) the degree of student involvement varies across education program and time; 3) student involvement includes quantitative (e.g., physical energy expended) and qualitative components (e.g., psychological energy expended); 4) the quantity and quality of student involvement is directly proportional to the student’s learning outcomes; and 5) education policies impact student involvement.

Student involvement in college enhances development in skill areas deemed pertinent for post-college vocational positions and overall quality of life (Moore et al., 1998; Pascarella & Terenzini, 2005). Moore and colleagues (1998) call into question which areas of student involvement in the collegiate setting matter, based upon Astin’s (1999) assertion that different types of involvement lead to varied outcomes. While student service programs create opportunities for students to integrate the knowledge gained in diverse curricular activities, distinct programs are designed to target specific student outcomes. Research examining the impact of CRS programs demonstrates an association between CRS participation and student outcomes related to health and wellness (e.g., Buzzelli, 2016); academic performance (e.g., Robbins et al., 2009); ethics, integrity, and character (e.g., NIRSA, 2008); social benefits (e.g., Artinger et al., 2006); sense of belonging and community (e.g., Elkins, Forrester, & Noel-Elkins, 2011); and life skill development (e.g., Haines & Fortman, 2008).

Point of Diminishing Returns

While Astin (1999) asserts a direct proportional linear relationship between the quantity of involvement and student outcomes, the literature challenges the notion that more is always better, suggesting that greater involvement may lead to diminished outcomes (i.e., the law of diminishing returns). The law of diminishing returns asserts that as energy (inputs) is invested, the benefits gained (outputs) will increase monotonically up to a certain point, upon which further energy invested will result in steadily decreasing benefits (Shephard & Färe, 1974); this point has been coined *the point of diminishing returns*. Within the context of CRS, the law of diminishing returns suggests student learning outcomes will steadily increase as CRS involvement increases until a certain point in which further involvement will result in nominal gains or potentially diminished outcomes.

Research examining the law of diminishing returns within CRS primarily focuses on the frequency of CRS usage and student outcomes related to academic performance and health and wellness. For example, student use of campus recreation facilities 25 times throughout an academic semester has been found to increase a student’s likelihood of first-year retention by 1% and 5-year graduation by 2% (Huesman, Brown, Lee, Kellogg, & Radcliffe, 2009). Quantity of involvement in group fitness, intramural sports, and sport club programs has been found to predict perceived social, intellectual, and fitness benefits of CRS involvement (Lower, Turner, & Petersen, 2014). CRS participants engaging in more than four hours of exercise per week were found to be significantly more likely to believe the student recreation center improved quality of life compared to non-users (Watson, Ayers, Zizzi, & Naoi, 2006).

While research demonstrates significant relationships between increased CRS involvement and student outcomes, a few studies have also demonstrated non-significant results. Watson et al. (2006) and Brock, Wallace Carr, and Todd (2015) found CRS usage to have a non-significant impact on student grade point average (GPA). Brock et al. (2015) also found no significant changes in health indices when a student increased or decreased CRS usage by two days a week. The conflicting findings indicate that higher levels of CRS involvement may not result in measurable student learning outcome gains, suggesting a possible threshold in which additional involvement produces no additional return.

While the majority of scholarship examining the relationship between college student experiences and outcomes assumes a linear relationship, Bowman and Trolian (2017) proposed “many relationships between student experiences and growth may be curvilinear in nature” (p. 478). They found engaging in co-curricular activities had a significant curvilinear relationship with psychological well-being, cognitive skills, tendencies and development, and leadership. The curvilinear association differs for various forms of student experiences, warranting further investigation in the CRS context. A more robust analysis of the association between CRS participation and student learning outcomes can inform strategic programming and support.

METHODS

Background

This study reports the results of a secondary analysis of data from 33,522 students from 38 different colleges and universities across the U.S. who completed the Recreation and Wellness Benchmark instrument as part of the 2013 National Association of Student Personnel Administrators (NASPA) Assessment and Knowledge Consortium. The sample consists of 29,142 college students enrolled at public institutions (86.9%) and 4,380 college students attending private institutions (13.1%). A total of 2,823 (8.4%) respondents were from small institutions (defined as having less than 5,000 students), 12,386 (36.9%) students were at medium institutions (defined as having between 5,000 and 15,000 students) and 18,313 (54.6%) students were at large institutions (defined as having more than 15,000 students).

Instrument Development and Administration

The Recreation and Wellness Benchmark instrument was selected for the current study, given its specific focus on CRS, in comparison to the popular National Survey of Student Engagement (NSSE), which measures co-curricular activities broadly. The Recreation and Wellness Benchmark instrument was originally used in the NIRSA/NASPA Consortium Campus Recreation Impact study. The instrument was most commonly administered to a random sample of the student population, but campuses also had the option of administering it to a segment of the student population. The survey was administered via Campus Lab’s mass-mailing tool. Colleges and universities registered to participate in the survey through the NASPA Consortium.

Measurement of Variables

The measure of involvement was limited to the number of different CRS activities participated in (breadth) and their frequency of CRS participation (depth) based on the secondary dataset. Students participated in an average of 4.49 (SD = 2.77) activities (ranging from zero to 13), and their median frequency of participation was two times per week (ranging from never to more than five times per week). Student learning outcomes were measured by asking students, “From your participation in [REC], do you feel you have increased or improved your [insert outcome]: (not at all, somewhat, definitely).” Please refer to Table 1 for a complete list of the CRS activities used to create the CRS breadth and depth of involvement variables.

Table 1. CRS Participation Area.

Campus Recreational Sport Activity

	Never	1-2 times per semester	1-2 times per month	1-2 times per week	3-4 times per week	5 or more times per week
Cardio-vascular training (e.g., treadmill, elliptical, stationary bike).....	17.0	9.0	12.4	24.8	24.5	12.2
Weight training/lifting free weights.....	30.5	9.7	11.3	20.4	18.3	9.7
Open recreation (e.g., pick-up basketball, volleyball, soccer).....	53.6	13.9	12.1	11.9	5.8	2.7
Instructor-led group fitness or exercise classes.....	57.9	14.5	9.3	12.1	4.9	1.4
Aquatics/pool.....	61.6	17.7	9.8	6.9	2.7	1.4
Intramural sports.....	65.5	13.2	6.0	11.9	2.5	0.9
Racquet sports.....	67.8	14.8	8.6	5.5	2.2	1.1
Outdoor adventure activities and/or trips.....	75.1	12.3	5.7	3.7	1.9	1.2
Wellness programs (e.g., wellness classes, wellness expo).....	77.8	12.2	4.5	3.1	1.4	1.0
Sport clubs.....	80.6	5.3	2.7	5.1	3.8	2.5
Classes (e.g., safety, non-credit, for credit).....	81.2	9.6	2.9	3.7	1.6	1.0
Personal training.....	83.8	4.4	2.9	3.9	3.1	1.9
Fitness assessments or testing.....	85.4	7.8	3.0	1.9	1.0	0.8

Data Analysis

Descriptive statistics were used to summarize responses to the demographic, involvement, and student learning outcome questions. The depth and breadth categories of students’ CRS involvement were used as the independent variables in the analysis. The Recreation and Wellness Benchmark instrument contained 23 questions that measured students’ perceptions of the benefits associated with participating in CRS programs. A principal component analysis (PCA) was conducted to examine the underlying factor structure of these benefits items.

Ordinary least squares (OLS) multiple regression was used to examine the relationship between CRS involvement and student learning outcomes. OLS regression is arguably the most widely used statistical method for fitting linear relationships between an independent variable and a single continuous dependent variable (McDonald, 2014; Rawlings, Pantula, & Dickey, 1998). OLS regression analysis was conducted to examine the linear relationship between participation in campus recreation activities and student learning. However, previous research suggests that the relationships between college student experiences and outcomes may be curvilinear, specifically quadratic (Bowman & Trolan, 2017; Lower, Forrester, Elkins, & Beggs, 2018). A quadratic relationship exists if there is a single bend in the relationship between the dependent variable and the predictor. A quadratic term is created by squaring the linear term of the predictor variable. The depth and breadth of CRS participation was modeled as both a linear and a curvilinear (quadratic) variable to see if student learning increased, decreased, or remained monotonic in response to increases in depth and breadth of CRS participation.

Linear and squared variables for depth (model 1) and breadth (model 2) of CRS involvement were used as the key predictors, and the summated student learning outcomes factor stemming from the PCA served as the dependent variable for both models. This study also used numerous control variables to account for other factors that may influence student learning outcomes including age, gender, ethnicity, class standing, enrollment status, place of residence, international student status, expected GPA, member of student club or organization, member of varsity team, and employment by the campus recreation department (Bowman & Trolan, 2017).

RESULTS

Background Demographics of Respondents

The median age of respondents was 22 years of age, and the sample consisted of approximately two-thirds women and one-third men. Just over 90% of students were enrolled full-time, and only 3.9% of respondents were international students. Respondents were predominately white (71.3%) and consisted of primarily undergraduate students (87.5%). Approximately one-third of students lived on campus, two-thirds lived off-campus, and 60% of students indicated living five miles or less away from the on-campus CRS facility. More than 80% of students expected to have a GPA of 3.0 or higher the semester that they completed the Recreation and Wellness Benchmark instrument. Less than five percent (4.7%) of students were varsity athletes, while 58.4% of students indicated they were a member of at least one student club or organization with 4% of respondents indicating they were currently or previously employed by the campus recreation department.

Student Learning Outcomes

PCA with varimax rotation was used to examine the factor structure of the 23 benefit items from the Recreation and Wellness Benchmark instrument. An orthogonal (Varimax) rotation was employed based upon previous literature that has found health and wellness outcomes and student learning outcomes uncorrelated (Lower et al., 2018). The use of rotation also enhances the interpretation of the factor loadings, as factors load highly onto some variables and less onto other variables, easing identification of the extracted components (Stevens, 2009). A factor loading cut-off of .50 was used to minimize the likelihood of items cross-loading and also to ensure that weak items were removed. The PCA produced a two-factor solution (eigenvalues = 12.50 and 2.19) that included 22 of the 23 items and accounted for 63.86 percent of the variance in the benefits items. One item, 'academic performance,' loaded on both factors and was subsequently eliminated.

The first factor contained 12 items that clearly reflected various health and wellness outcomes associated with participating in CRS programs (e.g., fitness level, overall health, feeling of well-being). The second factor was comprised of 10 items and addressed student learning outcomes associated with CRS participation (e.g., communication, learning, leadership, and problem-solving skills). Overall, the items loaded strongly (.555 to .842) on their respective factors, and appear to represent two independent benefit areas associated with involvement in CRS programs (refer to Table 2). Cronbach's alpha reliability coefficients were used to assess the internal reliability of these factors. Both the health and wellness, and student learning, outcomes factors demonstrated strong internal reliability ($\alpha=.940$, and $\alpha=.943$, respectively). As the authors focused on the student learning outcomes component for this study, more information about optimizing student health and wellness of CRS participation can be found in Lower et al. (2018).

Table 2. Factor Loadings for Health and Wellness and Student Learning Outcomes.

Factor	1	2
Health and Wellness Outcomes		
Fitness level.....	.828	
Overall health825	
Physical strength.....	.809	
Feeling of well-being770	
Weight control.....	.754	
Athletic ability.....	.749	
Stress management.....	.673	
Self-confidence.....	.662	
Balance/coordination628	
Concentration615	
Ability to get a good night's sleep558	
Time management skills.....	.555	
Student Learning Outcomes		
Communication skills.....	.842	
Leadership skills.....	.807	
Group cooperation skills.....	.800	
Problem-solving skills.....	.788	
Multicultural awareness.....	.757	
Ability to develop friendships.....	.755	
Sense of belonging/association754	
Respect for others708	
Ability to multi-task.....	.690	
Sense of adventure627	

Relationship Between CRS Involvement and Student Learning Outcomes

Results for the relationships between the depth (Model 1) and breadth (Model 2) of CRS involvement and student learning outcomes, adjusted for covariates, are presented in Table 3. While the results indicate a significant linear relationship exists for both depth and breadth of CRS involvement and the student learning outcomes variable, a significant curvilinear relationship was also present as indicated by the results for the corresponding squared terms.

Table 3. Regression Coefficients for the Relationship Between Participation in Collegiate Recreational Sports and Student Learning Outcomes

Collegiate Recreational Sports Participation	B	SEB	β
Model 1			
Depth of collegiate recreational sports participation	1.87*	.108	.579
Depth of collegiate recreational sports participation (Squared).....	-.127*	.013	-.327
Model 2			
Breadth of collegiate recreational sports participation	1.039*	.078	.453
Breadth of collegiate recreational sports participation (Squared).....	-.018*	.006	-.094

Note. * $p < .05$; SEB = Standard error of the unstandardized regression coefficient
 Model 1: $R^2 = .132$; $N = 10,584$
 Model 2: $R^2 = .184$; $N = 7,080$

Control variables included age, gender, ethnicity, class standing, enrollment status, place of residence, international student status, expected GPA, member of student club or organization, member of varsity team, and employment by the campus recreation department.

The results presented in Table 3 suggest that the relationship between CRS involvement and student learning outcomes is curvilinear. In each case, a positive linear term indicates a positive association between the independent (CRS involvement) and dependent (student learning outcomes) variables, while a negative curvilinear term indicates that the direction of the curvature is downwards and that the effect of the relationship is attenuated. The results suggest that overall, an increase in the depth (frequency) of CRS involvement increases student learning outcome scores, but at a higher frequency of involvement, student learning outcome scores actually decrease (see Figure 1a). As seen in Figure 1, the point of diminishing returns occurs at a frequency value of approximately eight times per week, after which student learning outcome scores start to decrease with increases in frequency of CRS involvement.

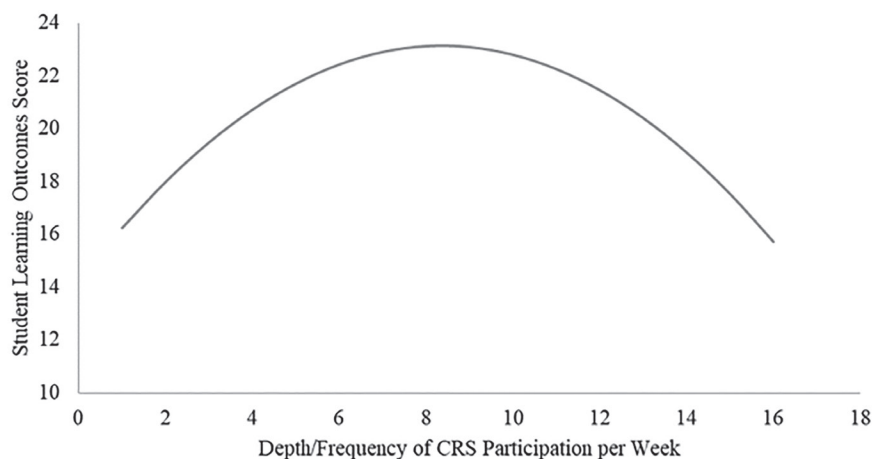


Figure 1a. Relationship between depth (frequency) of CRS participation and student learning outcomes.

The overall association between the breadth of CRS involvement (number of different CRS activities) and student learning outcomes is positive, but when students participate in an increasing number of different CRS activities, student learning outcome scores decrease (see Figure 1b). Student learning outcome scores start to decline once students start to participate in a considerably high number of different CRS activities (approximately 30), suggesting that participating in different types of CRS activities seems to have a beneficial effect on student learning outcomes. The point of diminishing returns appears to be well beyond the number of different CRS activities that most students would likely participate in.

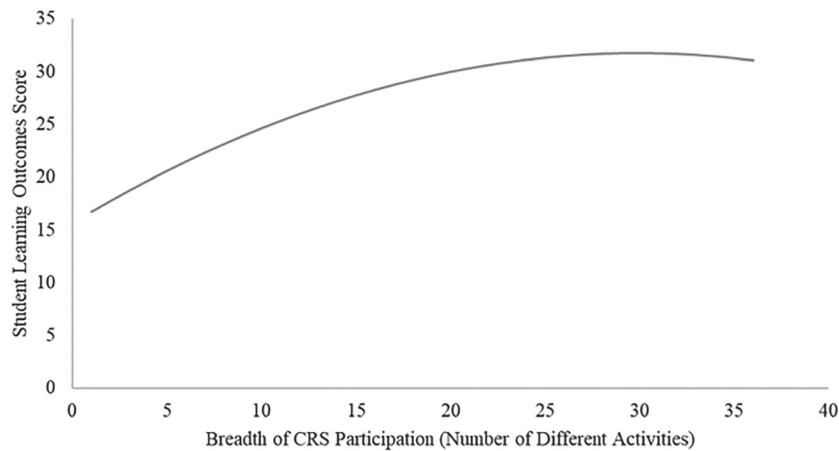


Figure 1b. Relationship between breadth of CRS participation and student learning outcomes.

DISCUSSION

This study furthers our understanding of the impact of CRS involvement on student learning. The influence of CRS participation frequency (depth) and the number of CRS activities participated in (breadth) on student learning outcomes were examined. Student learning outcomes of CRS involvement included communication skills, leadership skills, group cooperation skills, problem-solving skills, multicultural awareness, ability to develop friendships, sense of belonging, respect for others, ability to multi-task, and sense of adventure.

Depth of CRS Involvement

Findings from the study indicate participation in a CRS activity, up to eight times a week, resulted in increased student learning outcomes. However, participation in a single activity more than eight times a week resulted in diminished student learning outcomes, supporting the law of diminishing returns (Shephard & Färe, 1974). This finding largely supports Astin's (1999) assertions of the outcomes of student involvement as a positive relationship was demonstrated between depth of CRS involvement and student learning outcomes. Participation in a single CRS activity eight times per week is indicative of considerable involvement, as this may reflect a student participating daily in a particular CRS activity. As student learning outcomes continue to increase up to CRS involvement of eight times per week, campus administrators should seek to deepen the level of involvement of casual participants.

To increase depth of involvement, practitioners should ensure the CRS environment meets students' innate psychological needs of competence, autonomy, and relatedness, which have been found to enhance intrinsic motivation (Ryan & Deci, 2000) – a key contributor to CRS involvement. Practitioners could deepen the involvement of casual participants by integrating extrinsic motivators. Research examining the motivations of CRS participants with low involvement has found extrinsic, tangible motivations (e.g., money, clothing and equipment, food, class credit, etc.) to be the greatest source of motivation to participate in CRS (Parietti & Lower, 2016). By promoting an environment that fosters intrinsic motivation and integrates extrinsic motivators, practitioners could effectively deepen the involvement of both casual and highly involved CRS participants.

Breadth of CRS involvement

The findings from the study also revealed that student breadth of participation affects student learning outcomes. The more unique activities a student participates in, the greater the positive impact on student learning outcomes. This was found to be true for each additional activity, up to thirty different activities, at which point learning outcomes begin to diminish, reinforcing the law of diminishing returns (Shephard & Färe, 1974). This finding also supports the underlying premise of experiential learning theory (Kolb, 1984), which postulates a constructivist process in which the learner creates knowledge through actively engaging in and reflecting upon an experience. As each CRS activity provides a unique social and physical environment in which to engage, participation in additional activities provide new opportunities for student learning. This study builds upon our previous under-

standing of the outcomes of CRS involvement, as most studies focus on CRS involvement broadly or one specific activity (e.g., Huesman et al., 2009; Lower et al., 2014).

Participating in a greater number of unique activities provides the opportunity for a student to interact with different people, which is of critical importance to campus recreation professionals who have a goal of facilitating increased involvement in campus activities while promoting diversity and inclusion on campus. According to Astin (1993), students socializing with persons from different racial and ethnic groups has a positive influence on cultural awareness and student satisfaction with college. Promoting expansion of the breadth of activities can facilitate more diverse social interaction and further impact student learning. Further, student awareness and subsequent involvement in currently available CRS activities can be enhanced through intentional marketing. Practitioners may also consider expanding the diversity of activities within existing CRS programs, such as offering a variety of group fitness classes.

Avoiding the Point of Diminished Returns

While increasing the CRS involvement of students should remain a priority, practitioners must also be cognizant of the point of diminishing returns. It is not uncommon for a person seriously involved in an activity to view intense participation as a personal sacrifice (Stebbins, 2000). In addition, students heavily involved in a specific leisure activity often participate intensely at the expense of relationships with others (Scott & Shafer, 2001), possibly limiting their social network to these dominant activities which consume their time. Weidman's model of undergraduate socialization (1989) indicates that the normative context of institutions supports positive student learning outcomes. However, Astin (1999) asserts heavy involvement in educational activities can isolate students from peer groups and impede valuable and beneficial social experiences. Social integration is critical for student success and satisfaction with the college experience, as it has been found to benefit increased learning, cognitive growth, and personal development (Pascarella & Terenzini, 2005).

When considering the value of promoting physical activity across the lifespan, administrators should be aware of the possibility of student burnout as a result of intense involvement in a single CRS activity. Drawing parallels with early sport specialization literature, sport samplers – in comparison to sport specializers – have been associated with greater social capital and less burnout (Strachan, Côté, & Deakin, 2009). A key contributor to burnout is exhaustion (Gould, Udry, Tuffey, & Loehr, 1997), which may result from intense participation in one CRS activity. As burnout has been found to lead to participants emotionally and physically withdrawing from the sports activity or dropping out completely (Gould et al., 1997), practitioners must mitigate burnout. Self-determination theory can once again be applied in this instance, considering competence and autonomy have been found negatively related to exhaustion, devaluation, and reduced accomplishment – components of athlete burnout (Lonsdale, Hodge, & Rose, 2009). Within the diverse CRS program offerings, practitioners should ensure students have opportunities to experience competence and autonomy, which can be achieved through proper skill progression and allowance of self-determination.

Implications for Practice

Navigating optimal levels of student involvement in CRS is complicated. Therefore, the authors seek to provide implications that can help campus administrators guide students towards the ideal level of involvement. When considering the student experience, within moments of stepping foot on campus, students are inundated with organizational materials from distinct sections of campus (e.g., student clubs, honors and scholars programs, counseling services, etc.) to large scale traditional events (e.g., resource fairs, campus tours, residence hall move-in, etc.). Major promotional efforts for student activities occur during welcome week between student move-in and the first official day of classes. Creating awareness of available student programs and services is necessary to incite student involvement at the beginning of one's college experience, although these promotional efforts may also contribute to the over-involved student resulting in diminishing student learning outcomes.

From a student affairs perspective, it is important to recognize that students are involved in multiple activities across campus. As such, the results of this study are not limited to CRS but rather should be positioned within the broader student affairs unit. Student affairs practitioners should not operate as a silo within their unique depart-

ment, but must consider the broader implications of programmatic decisions. Administrators who see students involved in CRS activities to the exclusion of other important student experiences may encourage that student to either seek diverse experiences and new social groups within CRS or explore other student experiences facilitated by the university. While this form of advising has been called “intrusive” (Robbins et al., 2009), given an institution’s proactive intervention with students identified as at-risk for diminished outcomes, if welcomed, this type of institutional support can promote student success. Moreover, enhancing students’ awareness and direction could prevent students from constricting their social group and minimizing their engagement in other important campus activities (including academic activities) that positively impact student learning outcomes.

To support students’ personal, academic, and career goals, student counseling services are available through most universities. Counseling services have begun to embed counselors within residential spaces across campus to assist with immediate mental health concerns (M. Samad, personal communication, December 11, 2018). If students experience deficits in their social community, academic performance, career goals, or health due to over-involvement in various activities, they should be directed towards available counseling services that are equipped to address these concerns. According to the *Student Personnel Point of View*, student affairs should not only provide student services that support the mission of the institution, but also understand individual students and pay attention to their well-rounded development, including intellectual, physical, social, emotional, and spiritual development (Nuss, 2003). Student affairs and campus administrators should be trained on student development as they serve as an informal source of counsel on work-life balance, health and wellness, time management, and other factors influencing a student’s college experience and learning outcomes.

In addition to optimizing the quantity of student involvement in co-curricular activities, it is important to continually enhance the quality of involvement (Astin, 1999). Zepke and Leach (2010) encourage student affairs practitioners to invest in a variety of student support services (e.g., orientation processes, mentorship, childcare), adapt to evolving student expectations, and foster a culture welcoming to students from diverse backgrounds, particularly ‘non-traditional’ students (Zepke & Leach, 2010). To dismantle the discrimination that continues to be a critical social issue on college campuses, changes must occur in student affairs policy, resources, programming, staffing, and training to provide an inclusive campus environment for minority and ‘non-traditional’ students (Harley, Nowak, Gassaway, & Savage, 2002).

Limitations & Future Research

When interpreting the results of this research, it is important to do so in the context of the limitations of the study. The majority of the sample in this study is comprised of White women (62.6%). Despite the small sampling error (+ 0.52 at the 95% confidence level) associated with this data (Forrester, 2015), the percentage of White women in our study is slightly higher than the nationwide percentage of females (56.4%) in degree-granting postsecondary institutions the year in which this data were collected (National Center for Education Statistics, n.d.). As such, caution is advised when generalizing the results beyond this demographic.

While the factor analysis of the benefits scale produced two reliable factors, the learning outcomes measured in this study are diverse yet not exhaustive. Future studies should be grounded in a conceptual model of learning (e.g., Bloom’s taxonomy). Though self-reported learning outcomes are subjective, research demonstrates support for the adequacy and appropriateness of the use of self-report data in higher education research (Pike, 2011). Future research should consider integrating objective measures of learning outcomes for a more comprehensive understanding of the outcomes of CRS participation. Furthermore, while the power of the statistical tests was strong, the effect sizes were relatively weak. These results suggest that a more intentional benefits perspective should be incorporated into the planning and implementation of CRS programs to achieve these student learning outcomes.

The measure of involvement was limited to the number of different CRS activities participated in (breadth) and their frequency of CRS participation (depth) based on the secondary dataset. Future research may seek to explore optimal combinations of activities (breadth) that contribute to student learning outcomes. Frequency may not be the best measure of the depth of involvement as a student may participate in a CRS activity for 30 minutes or 2 hours; a more accurate measure – such as time spent engaged in an activity – is warranted. Based upon Astin’s (1984; 1999) conceptualization of student involvement as incorporating both quantitative and qual-

itative components, future research should consider adding a measure of qualitative involvement – such as effort expended while engaged in the activity.

While this research identifies a point of diminishing returns for student learning outcomes, more interpretive future research approaches might help contribute further insights or understanding regarding what it is about participating in CRS that facilitate these and other student learning outcomes. To accurately capture the student experience, future research may incorporate a qualitative approach to explore the sociohistorical cultural context impacting students' opportunities for CRS involvement, involvement experience, and future intentions to persist or withdraw from the activity. Further exploration of how the control variables - such as place of residence, location of CRS facilities, or CRS participation fees – influence student involvement in CRS activities and subsequent student learning outcomes will provide helpful context for student affairs practitioners. Researchers may also consider developing and testing a new student involvement framework that accounts for the environmental context and point of diminishing returns to extend theory and practice.

CONCLUSION

The U.S. Department of Education (2006) charges universities with increasing transparency and accountability through reporting crucial information, such as student learning outcomes, to inform policymakers and demonstrate the contribution of higher education to the public good. Campus administrators responsible for delivering programs, activities, facilities, and services to the student body are faced with justifying their costs and competing for internal resources, necessitating investigation and demonstration of student learning outcomes associated with student involvement. Though research supports the value of student involvement in a variety of campus activities for social integration within the institution (Pascarella & Terenzini, 2005), more opportunities for involvement has been linked with greater student involvement (Lower et al., 2015), which can lead to the over-scheduled student.

The current study demonstrates positive student learning outcomes associated with CRS involvement, providing evidence of the value of CRS programs in higher education. However, the findings reveal a curvilinear relationship between CRS involvement and student learning outcomes, illustrating a point of diminishing returns. Ultimately, this study reveals the reality of the over-scheduled student. Through strategic efforts, student development can not only be promoted but also protected. Ultimately, information is power; we hope that this study will inform higher education practice for the promotion of student development, health, and wellness.

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