

Development of the Student-Athlete Career Situation Inventory (SACSI)

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Currently a sound and reliable measure of a student-athlete's career development does not exist. The purpose of this study was to develop a psychometrically sound instrument that measures the career situation of student-athletes. Participants for the study were 204 (138 male and 66 female) student-athletes from a large midwestern Division I university. A primary axis factor analysis using promax rotation revealed that five factors, named: Career Development Self-efficacy, Career versus Sport Identity, Locus of Control, Barriers to Career Development, and Sport to Work Relationship, accounted for 81.39% of the common variance in the data. The internal reliability of each factor of the Student-athlete Career Situation Inventory (SACSI) was established using Cronbach's alpha (.70 to .80). The criterion validity of the SACSI was investigated by regressing career experiences and gains on the five factors of the SACSI, resulting in significant squared multiple correlations (.17, .28).

KEY WORDS: student-athlete career development; career situation; academic gains; athlete experiences.

One of the most important services that counseling psychologists can provide student-athletes within the domain of career counseling is helping them prepare for transition from sport to career-related roles. Transition from sport can be a difficult experience for

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today's collegiate student-athlete. Few collegiate athletes make sufficient plans to prepare for career termination and may struggle with their transition from the role of athlete to non-athlete (Baillie, 1993). Specifically, many student-athletes may encounter internal and external barriers that prevent them from taking the necessary steps to explore possible career interests in an effort to prepare for transition. Investigation of these barriers have brought attention to some of the attitudes, beliefs, and perspectives maintained by student-athletes who may find transition from sport to the working world more difficult.

Remer, Tongate, and Watson (1978) suggested that failure to prepare for transition from sport is due to the fact that college athletes have been shown to lack realistic life expectations. Blann (1985) found that first and second-year male student-athletes from a sample of Division I and Division III schools had career plans that were not as well formulated as those of matched non-athletes. Petitpas, Danish, McKelvain, and Murphy (1990) offered support to Blann's findings, claiming many athletes feel that investing effort in the career development process would detract from their sport performance. Further, Sowa and Gressard (1983) suggested that not only do student-athletes have difficulty with formulating well-defined educational and career goals, but also with gaining personal satisfaction from educational experiences.

A catalyst for such a discrepancy in career preparation between athletes and non-athletes may be due to athletes' expectancies to continue their athletic careers after college. Although only 2% of all collegiate athletes advance to professional levels, Kennedy and Dimick (1987) found that 48% of a sample of 122 basketball and football players expected to play professional sports following their college careers. Such expectations not only disguise the need to plan for possible career transitions, but serve as an indicator of a student-athlete's level of career maturity, or the degree of an individual's completion of appropriate career developmental tasks (Zunker, 1998). Kennedy and Dimick (1987) provided support for this assertion, suggesting that many athletes in revenue-producing sports may be unprepared to take advantage of one of the most highly valued aspects of the college experience—the initiation and development of viable career plans. Additionally, Smallman and Sowa (1996) found that the career maturity levels of both revenue and non-revenue student-athletes were significantly lower than that of a sample of non-athlete college students.

A better understanding of the motives behind sport participation may provide insight into the lack of career maturity among student-athletes. Individuals are inclined to participate in sports for a variety of reasons including self-development, affiliation, life opportunities, recognition, and to enhance perceived competence (Murphy, 1995). At the collegiate level, life opportunities exist as potential scholarships or other types of funding, while recognition occurs through spectator identification at local and national levels. Participation in sport has also been found to greatly influence many life roles and contexts that in turn positively benefits personal growth. Developmentally, sport participation can promote autonomy, achievement, initiative, leadership skills, increased competency, and enhanced self-concept and self-esteem (Sonestram, 1982). Danish, Petitpas, and Hale (1990) add that all levels of sport, physical activity, teamwork, and competition have important implications for social, physical, and personal development.

With all of the intrinsic benefits of sport participation, in addition to the time and energy demands of a student-athlete's athletic environment (Martens & Lee, 1998; Petitpas et al. 1990; Sowa & Gressard, 1983), it is understandable why career exploration and planning may not be a top priority for many of today's student-athletes. Consequently, student-athletes who invest more of themselves in the role of an athlete and who possess a stronger athletic identity have been shown to experience more anxiety regarding career exploration (Grove, Lavalle, & Gordon, 1997). As a result of such anxious feelings, student-athletes are unlikely to take a proactive approach in their career development. For example, Martens and Lee (1998) suggested that it is improbable that a large majority of collegiate student-athletes will ever voluntarily seek out university career centers for career assistance. Considering the time commitment and multi-faceted obligations of student-athletes, it is plausible to assume that even if student-athletes were looking to engage in career exploration, they simply may not have the time or energy to do so. Moreover, as course work, athletic preparation, and/or competition occur during times when career development services are offered, e.g., career center office hours, student-athletes who have a desire to engage in career development activities may not have the ability to do so (Martinelli, 2000).

It is conceivable that the inadequacies of and barriers to student-athlete career development can be realized through the attitudes, beliefs, and interests of student-athletes as they relate to career development and preparation. To date, there have been very few studies

where investigators have empirically and reliably investigated such attitudes, beliefs, and interests. Part of the reason for such a deficiency is due to the non-existence of a sufficient instrument to reliably measure career development and preparation specific to student-athletes. Researchers have utilized several inventories to measure athletes' career development, including the Career Maturity Inventory (CMI; Hansen, 1974), and the Career Development Inventory (CDI; Super, 1973). However, these inventories were designed to be used with members of the general population, and as a result may not address the demands and the resulting influence of a student-athlete's dynamic athletic environment on his or her career attitudes, beliefs, and interests. Additional support for the need of a specialized instrument that measures the career situation for members of a specific population is offered by Gysbers, Heppner, and Johnston (1998), who suggested that a valid and reliable instrument measuring career development should consider both the external, or environmental, and internal, or psychological, barriers that influences one's career development. Therefore, to adequately measure the career development (or career situation) of a student-athlete, an instrument that considers the influence of external and internal barriers that are inherently different than those experienced by collegiate non-athletes, is necessary.

To date, researchers have yet to establish the psychometric properties of an instrument that measures the career situation of a student-athlete. In this article we define career situation as "the extent of one's career development and preparation characterized by the sophistication of one's career attitudes, beliefs, and interests." Such a specialized inventory is needed as current career development measures do not consider the influence of both the external and internal barriers resulting from sport participation on a student-athlete's career development.

Therefore, the purpose of this study was to develop a psychometrically sound instrument that measures the career situation of student-athletes. Through the use of an instrument that measures the career related attitudes, beliefs, and interests of student-athletes, professionals within a student-athlete's sport environment will be able to develop more effective educational and counseling intervention strategies that may help student-athletes prepare for the transition from their sport to career related roles. By knowing where student-athletes are in relationship to their ability to engage in career exploration or to prepare for a career role, counseling psychologists, athletic department administrators, and athletic support staff

can help facilitate student-athlete career development by designing workshops, programs, and opportunities for appropriate career guidance (e.g., counselors or mentors).

Method

Participants

Participants for the study were 204 (138 male and 66 female) student-athletes from a large midwestern Division I university. Participants were volunteers from a potential population of approximately 450 student-athletes. The most salient characteristics of the participants were their status as student-athletes and being of college age, with ages ranging from 18 to 24 ($M = 19.00$ – 20.00 ; $SD = 0.66$). All other characteristics had equal potential for representation as the investigators did not control for gender, race, or class standing when recruiting subjects. Within the total sample, 26% ($n = 53$; 48 African American, 4 Asian American, 1 “other”) represented people of color and 74% ($n = 151$) were European American. Specific to class standing, 22.1% ($n = 45$) were freshmen, 28.9% ($n = 59$) were sophomores, 27% ($n = 55$) were juniors, 16.7% ($n = 34$) were seniors, 4.4% ($n = 9$) were fifth-year seniors, and 1% ($n = 2$) were graduate students.

Materials

Three different inventories were administered to participants. The first inventory was the actual Student-Athlete Career Situation Inventory (SACSI), while the second and third inventories related to athlete experiences and perceived academic gains.

SACSI scale development

Five graduate students in counseling psychology worked collaboratively to create the scale items. During the initial stages of item generation, each graduate student produced a list of 10–20 potential items designed to measure the construct of student-athletic career situation. They did this while referring to existing scales, related literature focusing on the environmental factors that may influence student-athlete career development (e.g., Martens & Lee, 1998; Petitpas et al. 1990; Sowa & Gressard, 1983) and by considering the university setting in which the student-athlete is enrolled. Although the researchers

were aware of the various possible dimensions within the construct's nomological net (e.g., readiness, confidence, and personal control) a deliberate effort was made not to create an instrument with sub-scales based on items that may have corresponded solely with these dimensions. Although these dimensions served as a guide during item generation, the researchers felt that the dynamic influence of collegiate athletic participation on student-athlete career development may render the formation of factors, or dimensions, that may have not been originally considered part of the construct's nomological net. Each student's items were then compiled onto one larger list of possible items. From that list of items, questions were selected to be included on a list of 50 items based on each item's ability to adequately measure the construct of student-athletes career situations as a whole, as agreed upon by each graduate student and their research advisor.

To ensure the consistency of item presentation (e.g., length and wording) and to limit the potential for responses based on social desirability, each student revised the potential final list of items. In addition, each student included suggestions for reverse graded items in an effort to establish response validity. Based on collaborative agreement on each student's suggested revisions, a final draft of 40 items was generated. In addition to item generation, the graduate students worked together to develop a scale with appropriate anchors for item responses (1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, and 5 = *strongly agree*). A neutral anchor was included as the students felt it was important to capture student-athletes' possible feelings of ambivalence for the content presented in each item, and perhaps toward their career situation in general. A final high total score on the SACSII, after changing the scores of all reverse-scored items, would indicate a high or positive degree of career development with regard to one's career situation.

Student-athlete experiences

In addition to the SACSII, participants were asked to complete a battery of items that asked about their college experiences (Cox, Sandstedt, Martens, Ward, & Webber, 2001). Five of these items related specifically to career related experience. Responses to these five items were used to establish the criterion-related validity of the SACSII as the specific experiences can be demonstrated to be positive indicators of one's efforts to achieve higher levels of career development, e.g., "talked to a student, instructor or coach about academic

majors and careers that they lead to.” The complete list of experience items is listed in Table 1.

Student gains

In addition to the SACSI and student experience items, participants were asked to complete a battery of items that asked about their perceived academic gains (Cox et al., 2002). Five of these items related specifically to career related gains. Responses to these five items were used to establish the criterion-related validity of the

Table 1
Items used to Measure Student–Athlete Career Related Experiences and Perceived Gains

Experiences Validity Items:

(Participants responded to the Experiences validity items using the anchors of never, almost never, occasionally, often, or very often).

1. Talked to a student, instructor or coach about academic majors and careers that they lead to.
2. Thought about going to graduate school or a professional school after completing my undergraduate degree.
3. Read a magazine or newspaper article that dealt with a possible career option.
4. Visited the career center, talked to a counselor about career opportunities and interests, and/or completed an inventory dealing with career interests.
5. Completed an inventory dealing with career interests or some other inventory designed to measure career aptitude.

Gains Validity Items:

(Participants responded to the Gains validity items using the anchors of not at all, somewhat, greatly, or definitely).

1. Gained knowledge and skills applicable to a specific job or type of work.
 2. Gained a broad education and learned about different academic disciplines.
 3. Learned skills that will help me in my chosen career.
 4. Learned things in college that should make it possible for me to finally support myself independent of my athletic scholarship or my parents.
 5. Know what I am going to do when I complete my collegiate athletic career.
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SACSI as the specific academic gains can be demonstrated to be positive indicators of one's efforts to achieve higher levels of career development, e.g., "gained knowledge and skills applicable to a specific job or type of work." The complete list of gains items is listed in Table 1.

Procedure

After receiving approval from the campus Institutional Review Board, the investigators approached coaches from 15 sports and asked for their permission to solicit the voluntary participation of their athletes. After receiving permission, the investigators presented each athlete with a brief overview of the study and ask for their voluntary participation. No inducement was offered for participation in the study. Accordingly, it was made clear that failure to volunteer to participate in the study would not result in any type of retribution from their coaches or the investigators. Inventories described in the materials section were presented to each participant in either a team meeting or a one-on-one situation. Prior to completing the inventory, participants were informed of the voluntary nature of the research and that it would take approximately 15 minutes to answer all questions.

Statistical Analyses

Descriptive statistics, including means, standard deviations, and skewness and kurtosis values were calculated for each item. Exploratory factor analysis was used to determine the factor-structure of the SACSI. Cronbach's alpha was calculated to establish the internal consistency for the total scale and for each identifiable factor. Finally, multiple regression was used to determine the criterion-related validity of each identifiable factor.

Results

Data Screening

Prior to any statistical analysis, scores for reverse-scored items were changed to the appropriate direction. To ensure that response values were within the expected range and that no items

were omitted, minimum and maximum values for each variable were calculated. In addition, means, standard deviations, and indices of skewness and kurtosis were calculated for each of the 40 items. Item 12 was omitted from further analysis due to a high kurtosis value (3.9) that did not fall within a normal range of responses 4.

Exploratory Factor Analysis

To determine the dimensional structure of the items chosen to assess the career related attitudes, beliefs, and interests of student-athletes, responses were subjected to exploratory factor analysis. A principal axis common factor method was used to extract possible factors, followed by an oblique promax rotation to identify stable factor loadings for each item. An oblique rotation was performed as it was believed that extracted factors would be moderately correlated. A scree plot was used to help determine which factors would be retained for rotation. Specifically, the scree plot indicated five possible factors on the slope of the plot before the plots of other insignificant factors leveled off. Accordingly, identifiable factors were required to have eigenvalues greater than 1. In interpreting the rotated factor pattern matrix, an item was said to load on a given factor if the factor loading was .40 or greater for a potential factor and the item did not cross-load on other factors.

Results from the exploratory factor analysis indicated the existence of a five factor, 30-item, scale that accounted for 81.39% of the common variance. Factor loadings, communalities, means and standard deviations of retained items are displayed in Table 2. While no items were found to cross-load on multiple factors, nine items did not meet the factor loading criteria of .40 and were therefore omitted from any further analysis. The first factor, labeled "Career Development Self-efficacy", accounted for 15.28% of the common variance and contained six items. Nine items were found to load on the second factor, labeled "Career versus Sport Identity", which accounted for 36.27% of the common variance. The third factor, "Locus of Control", contained four items and accounted for 13.67% of the common variance. Six items loaded on factor four, labeled 'Barriers to Career Development', accounting for 8.56% of the common variance. Finally, the fifth factor, "Sport to Work Relationship", accounted for 7.61% of the common variance and contained five items. The final 30-item

Table 2
Item Factor Loadings, Communality Scores, Means, and
Standard Deviations for the Final 30 Item Scale-Promax
Rotated Solution; Factor Eigenvalues

<i>Item</i>	<i>Factor Loadings</i>					<i>Comm- unality</i>	<i>M</i>	<i>SD</i>
	<i>I</i>	<i>II</i>	<i>III</i>	<i>IV</i>	<i>V</i>			
2	.62	-.17	.12	.41	-.01	.60	3.07	1.04
3	.62	-.15	.08	.03	.01	.41	3.84	.96
5	.77	-.10	-.08	.06	-.06	.62	3.50	.90
6	.58	.06	-.02	-.11	.08	.36	4.04	.85
23	.55	.22	-.06	-.02	.07	.36	3.80	.91
25	.47	.12	.08	-.05	-.03	.25	3.61	1.12
8	-.14	.41	-.21	-.08	.09	.25	3.39	1.03
9	.14	.52	-.14	-.09	-.06	.32	3.99	1.00
10	-.10	.71	-.09	.10	-.26	.60	3.27	1.34
12	.37	.46	-.03	-.11	.13	.38	4.26	.74
13	.09	.41	.13	.38	.07	.34	3.39	1.09
15	.00	.64	-.07	.20	-.35	.58	2.94	1.37
20	-.06	.42	.25	-.09	-.02	.25	3.43	1.21
24	.09	.46	.28	-.06	.11	.31	3.51	1.26
28	.00	.57	.00	-.08	.10	.34	3.75	1.15
21	.08	.06	.45	.00	.03	.21	3.55	1.06
22	.05	.33	.48	-.21	.00	.39	3.99	1.16
26	-.06	-.15	.65	-.06	.03	.45	3.45	1.06
27	.11	-.07	.67	-.09	-.02	.47	3.69	.98
1	.12	-.10	.12	.41	-.02	.21	2.94	1.05
4	-.17	-.09	.04	.77	.03	.63	2.64	1.18
7	.07	.04	-.04	.63	.08	.41	2.95	1.09
16	.17	.07	-.26	.51	.00	.36	3.08	1.08
17	-.04	-.07	.15	.55	.16	.36	2.61	1.06
30	.01	.23	-.35	.45	.07	.38	3.23	1.18
11	.19	.03	.11	.01	.62	.43	4.04	.94
14	.04	-.01	.04	.01	.62	.39	3.87	.85
18	-.04	-.07	.21	.19	.75	.65	4.08	.81
19	.06	-.22	-.18	.09	.52	.36	3.52	1.06
29	.01	.12	-.14	-.04	.52	.31	3.93	.96
Eigenvalue	6.67	2.81	2.51	1.57	1.40			

inventory, along with the scoring key, can be obtained from the second author (coxrh@missouri.edu).

To assess if the extracted factors were indeed distinct factors, correlations between each factor were calculated. Pearson correlation values support the distinct nature of each factor, with values ranging from .11 to .43.

To assess the internal consistency reliability of the SACSI, coefficient alpha was calculated for both the SACSI as a whole and the sub-scales that correspond with identifiable factors. Alpha levels of .70 or above indicated acceptable internal consistency. Reliability estimates for each factor were .78, .80, .70, .72, and .73, respectively, while for the total scale it was .83.

Criterion-Related Validity

The criterion-related validity for the SACSI was assessed using multiple regression. Averaged scores from selected items on an instrument designed to measure student-athlete experiences and gains from such experiences served as criterion variables. Specifically, five items associated with student-athlete career related experiences and five items that represent career related gains were summed and averaged for each participant, resulting in two variables that served as dependent variables for each regression analysis (see Table 1 for validity items). A separate multiple regression analysis was conducted for each dependent variable, with each SACSI factor serving as one of five independent variables. Results for the regression analyses can be found in Table 3. Inspection of the results indicate that for the criterion variable of "Experiences", Self-efficacy, Career versus Sport Identity, and Locus of Control were the only factors that displayed significant regression coefficients. The squared multiple correlation (R^2) for this regression analysis was .17 ($p < .01$). The significant factors of Self-efficacy, Career versus Sport Identity, and Locus of Control uniquely accounted for 3%, 9% and 7% of the variance, respectively. Interestingly, a negative relationship was observed between Locus of Control and career related Experiences.

For the criterion variable of "Gains", Self-efficacy and Career versus Sport Identity displayed significant regression coefficients. The squared multiple correlation (R^2) for this second regression analysis was .28 ($p < .01$). The significant factors of Self-efficacy and Career versus Sport Identity uniquely accounted for 15% and 2% of the variance, respectively.

Table 3
Results of Regression Analyses
for Criterion-Related Validity

<i>Criterion</i>	<i>Factors</i>	<i>Beta</i> [#]	<i>T-Ratio</i>	<i>Unique</i> ^{##}	
				<i>Variance</i>	<i>r</i> ^{###}
Experiences	1 (Self-efficacy)	.20	2.70 ^{**}	.30	.22
	2 (Career vs. sport identity)	.35	4.66 ^{**}	.09	.27
	3 (Locus of control)	-.31	-4.12 ^{**}	.07	-.09
	4 (Barriers to career)	-.02	-.28	.00	.09
	5 (Sport to work relationship)	-.01	-.19	.00	.02
Gains	1	.44	6.44 ^{**}	.15	.50
	2	.17	2.47 [*]	.02	.30
	3	-.04	-.65	.00	.16
	4	-.01	-.11	.00	.19
	5	.08	1.28	.01	.16

[#] Standardized Beta; ^{##} Squared semi-partial correlation; ^{###} Simple correlation with criterion; * $p < .05$; ** $p < .01$.

Discussion

The results of this investigation provide preliminary support for the reliability and validity of the SACSI. The five factors were given the following labels: Career Development Self-efficacy, Career versus Sport Identity, Locus of Control, Barriers to Career Development, and Sport to Work Skill Relationship, respectively. Career Development Self-efficacy is defined as the degree to which a student-athlete feels confident in his or her ability to engage in career development tasks, e.g., using a campus career center to explore a variety of career interests. A student-athlete's propensity to see himself or herself more as a student seeking academic and career achievement as opposed to athletic achievement is considered by the Career versus Sport Identity factor. The findings of Petitpas et al. (1990) and Blann (1985) support the existence of such extreme perspectives of a student-athlete's identity. Locus of Control is defined as the degree to which a student-athlete feels that he or she has the power to

make decisions regarding his or her career development, e.g., registering for classes of interest as opposed to classes suggested by others in the athletic environment. *Barriers to Career Development* assesses the numerous aspects that are inherent within the role of a student-athlete that may hinder career development, e.g., time, energy, accessibility of resources. Many of these barriers have been explored by several researchers including Martens and Lee (1998), Petitpas et al. (1990), and Sowa and Gressard (1983). Finally, a student-athlete's ability to recognize valuable skills that can be taken from their sport experience and used in career settings, e.g., communication and leadership skills, is considered by the Sport to Work Relationship factor. Although two of the five factors accounted for less than 10% of the common variance, the item content of each factor warrants the conceptual organization by which each factor was derived. Moreover, the five-factor structure of the SACSII is further supported by the alphas for each factor that indicate adequate reliability and internal consistency.

Specific to validity, preliminary analyses indicate that the items associated with the factors of "Career Development Self-efficacy" and "Career versus Sport Identity" are predictive of a student-athlete's collegiate "Experiences" and "Gains" that relate to career development. Such relationships make conceptual sense. One would expect that student-athletes who feel confident about how to successfully engage in career development activities and who do not maintain a strong athletic identity would also be student-athletes who actively pursue experiences that would foster their career development. Additionally, student-athletes would understandably perceive that they had many fulfilling and beneficial "gains" resulting from their collegiate experience if they recognized a newfound high-degree of career development self-efficacy while fostering their personal identity outside of sport.

Interestingly, items associated with the "Experiences" criterion variable were also found to have an inverse relationship with items associated with the "Locus of Control" factor. A possible interpretation of this finding can be attributed to the academic environment of the participants in the current study. Specifically, academic advisors or counselors who oversee the academic progress of the student-athletes involved with this study may take a proactive role in organizing and scheduling career development related experiences for their student-athletes. As a result, although the student-athletes in this sample may have many experiences that facilitate their career

development, they feel that they are not responsible for controlling their participation in such experiences.

It is important to note that this is a preliminary investigation of the psychometric properties of the SACSI. The fact that all participants came from one university warrants caution when generalizing the evaluative abilities of the instrument. Further confirmatory analyses utilizing a more diverse sample are necessary before the factor structure of the SACSI can be fully established. Moreover, additional validity analyses are also necessary. An ideal criterion variable that would further support the predictive ability of the SACSI may include a measure of post-graduate job-placement or job satisfaction.

Despite the preliminary nature of this investigation, the results support the rationale behind the development of a career development inventory specifically tailored for student-athletes. Although the factors of Career Development Self-efficacy, Locus of Control, and Barriers to Career Development may correspond with similar sub-scales of other career development inventories, the factor structure of the SACSI also considers components of career development that are exclusive to a student-athlete's environment. Specifically, the influence of student-athletes immersion into their own athletic identities and whether or not they can apply sport-related skills to job-related tasks plays apparent salient roles in a student-athlete's career situation. The SACSI, or any other inventory designed to measure the career situation of a student-athlete, can be a valuable tool in assisting athletic department administrators create and implement programs that facilitate student-athlete career development.

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