Improving the Exchange Rate for Student-Athletes: Transferable Skills, Athletic Identity, and Career Development

Parker Rhomberg

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IMPROVING THE EXCHANGE RATE FOR STUDENT-ATHLETES:
TRANSFERABLE SKILLS, ATHLETIC IDENTITY, AND CAREER
DEVELOPMENT

by

Parker Rhomberg

A Dissertation
Submitted in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Philosophy

Major: Counseling Psychology

The University of Memphis
August 2021
Abstract
This study examined whether an intervention facilitating student-athletes’ awareness of their transferable skills increased their career adaptability and positive career outcome expectations. This study also explored whether the strength of student-athletes’ athletic identities was associated with changes in scores on the career outcome variables of interest. Data obtained from student-athletes (N = 26) and non-student-athletes (N = 24) at a Division I midsouth university indicated positive gains in the career outcome variables but athletic identity was not related to the effects of the intervention. The findings suggest partial support for the efficacy of an intervention for student-athletes focused on increasing awareness of how their athletic skills could be transferable outside of sport.

Keywords: career development, career adaptability, vocational outcome expectations, athletic identity, student-athletes
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Introduction

College athletics are extremely popular in the United States with millions of Americans avidly following their favorite college athletic programs, attending and viewing athletic events, purchasing memorabilia, and wearing the jerseys of specific players. Athletics are financially beneficial to universities, and there are also many potential benefits to athletic participation for students. Student-athletes can combine opportunities to extend successful athletic careers and gain a post-secondary education that can facilitate their successful transition into the professional workforce (Kissinger & Miller, 2009). Other potential benefits include improving health; promoting societal values and integrity and building character; enhancing confidence, motivation, sense of empowerment, and self-esteem; offering opportunities for education and career in sports; expanding life experience and developing life-skills; and knowing how to deal with failure and difficult situations (Blinde et al., 1993; Coakley, 2007; Eitzen & Sage, 2008; Shaffer & Wittes, 2006; Woodruff & Schallert, 2008). Athletic participation can impart skills and a sense of self that can bolster student-athletes in their transition into non-athletic careers.

However, as college athletics have become more lucrative, there is greater emphasis on the ‘athlete’ part of student-athletes and growing concerns about the potential exploitation (McCormick & McCormick, 2006), unrealized academic potential (Shulman & Bowen, 2001), and the personal and psychological development and health of student-athletes (McCormick & McCormick, 2006). The level of involvement in athletics often precludes optimal capitalization on traditional college experiences and opportunities and preparation for the transition out of athletics. Student-athletes are often behind their non-athlete peers in terms of critical career readiness factors such as self-exploration and assessment of their personal interests, skills, and dispositional qualities (Hook, 2012; Linnemeyer & Brown, 2010; Murphy et al., 1996; Petitpas
et al., 1997). Student-athletes are also often unable or less able to gain work experience, volunteer, or major in their preferred area of interest during their formative collegiate years (NCAA, 2016). The substantial amount of time spent in athletic realms and sacrificed involvement in other areas suggests student-athletes’ identities in career and student domains may be less developed than in the athletic domain.

The student-athlete experience represents significant engagement by student-athletes in their athletic role and foster an athletic identity. Athletic identity is a social role defined by Brewer et al. (1993) as the degree to which an individual identifies with their athletic role. High athletic identity has been associated with decreased career planning for life after college, unreasonable expectations of becoming a professional athlete, lower levels of career adaptability, and decreased career maturity (Murphy et al., 1996; Tyrance et al., 2013). These deficits in career readiness may be remedied if student-athletes realize the important skills they develop through their athletic participation that could easily be applied in career domains (e.g., leadership, communication, teamwork, self-motivation, and organization) (Danish et al., 1993; Mayocchi & Hanrahan, 2000; Petitpas & Schwartz, 1989; Van Raalte et al., 2017). However, student-athletes may not realize how those skills can transfer into the workplace.

Transferable skills is not a novel concept; however, there have been few studies demonstrating the efficacy of interventions utilizing transferable skills to facilitate the career development process for athletes. Even fewer of these studies have implemented interventions working with active athletes rather than athletes who have recently retired or are about to retire. Yet, the need for improved student-athlete career development is apparent, and transferable skills might provide an important pathway. The present study tested the effectiveness of an intervention designed to raise current student-athletes’ awareness of their athletic skills that can
successfully transfer to other future careers and increase their career adaptability and vocational outcome expectations. Since high athletic identity is a recognized barrier to healthy career and self-exploration, this study also explored the relationship between athletic identity and changes in measures of career development following the transferable skills intervention.

**Career Development Programming for Student-Athletes**

Most athletic departments offer a host of services and accommodations (e.g., tutoring, academic advising, life skills and career development programming, etc.) for student-athletes, so other campus services are considered secondary or unnecessary. Due to time constraints and accessibility, student-athletes are more likely to utilize academic and career resources housed within athletic departments rather than campus resources. Thus, student-athletes often underutilize campus counseling services, including career services, due to time constraints and lack of exposure or knowledge of campus resources (Martin, 2008). Academic advising and services for student-athletes have been criticized for focusing on maintaining eligibility rather than helping them earn a viable degree (Wiggins, 1991). Even in programs free of fraud and other violations, student-athletes themselves have been stated to have little to no control or responsibility over their academic planning (Adler & Adler, 1991, Fountain & Finley, 2009; Jayakumar & Comeaux, 2016). This type of system can facilitate a lack of engagement in the developmental exploration processes that most other students experiences during their college years.

Broughton and Neyer (2001) described a practical approach to advising and counseling student-athletes that consists of four areas: academic advising, life skills development, clinical counseling, and performance enhancement. Although academic advising is the most popular and traditional modality supported and implemented by universities, life skills development could
serve as a promising supplementary service facilitating career development. Ryan et al. (2015) reported that many programs typically focus on life skills such as creating a resumé, networking, and interviewing and have less explicit emphasis on recognizing the skills developed through participation of sport and how those skills can be repurposed for the workplace. The current study provided a career intervention focusing on helping student-athletes identify how their skill sets would be appropriate in careers outside athletics.

**Life-Span, Life-Space Theory**

Life-span, life-space theory can be used to conceptualize the career development processes affected by student-athletes’ strong emphasis on their athletic role (Super, 1953, 1990; Super et al., 1996). In Super’s theory career development is viewed as accomplishing a set of vocational tasks as one moves through the developmental stages across the lifespan and implementing one’s self-concept in work roles. The importance of exploring one’s career options during adolescence has been well documented (Chiesa et al., 2016; Flum & Blustein, 2000; Savickas, 1997; Super, 1990; Super et al., 1996). Vocational tasks of crystallizing, specifying, and implementing the vocational self-concept in an occupational role are associated with the exploration stage (Arnett, 2004). Accomplishing these tasks requires individuals to learn about themselves and the world of work. Individuals who have not gained self and world of work knowledge are often described as having lower career maturity.

Life-span, life-space theory accounts for the concurrent existence of multiple identity roles within one’s psychosocial life-space (Super, 1990; Super et al., 1996). One’s life-space is essentially the arrangement of such roles, which differ in salience. Salience is based on emotional commitment, behavioral participation, and knowledge of the role (Super, 1990; Super et al., 1996). When considering the time and commitment each role may consume, it is common
to have only two or three main roles, whereas other roles are more negligible (Super et al., 1996). Student-athletes’ self-concepts are often focused on their athletic roles to the exclusion of developing other aspects of self and student-athletes strongly identifying as an athlete frequently sacrifice the exploration of other possible career roles (Houle & Kluck, 2013).

**Athletic Identity**

Although student-athletes undergo similar maturation processes as their non-athlete counterparts, they also face challenges of balancing their time and effort in ways that can strongly influence their identity development. Athletics are a significant part of student-athletes’ personal identities as a product of time spent, sense of mastery, social validation, and relational networks. Positive outcomes have been related to a strong athletic identity including the development of a salient identity (McPherson, 1980), greater global self-esteem (Marsh et al., 1995), higher levels of positive affect (Shapiro & Martin, 2010), a positive effect on athletic performance (Danish, 1983), a greater involvement and commitment to physical activity (Fox & Corbin, 1989), and higher sport-related competitiveness, goal orientation, and win orientation (Brewer et al., 1993). Competing as an athlete at a high level has an obvious positive impact on individuals.

However, there are also numerous difficulties associated with strong athletic identity. High levels of commitment to, and demands of, intercollegiate athletics interfere with the student-athlete’s opportunities for exploratory behavior and promote identity foreclosure (Chartrand & Lent, 1987; Nelson, 1983; Petitpas & Champagne, 1988). Individuals with high athletic identity have been found to experience higher post-sport retirement anxiety (Giannone et al., 2017), delayed career skill acquisition and anxiety in career decision-making (Grove, Lavallee, & Gordon, 1997), low levels of career maturity (Murphy et al., 1996), increased
identity foreclosure (Good et al., 1993), and difficulty transitioning out of sport (Alfermann et al., 2004).

Facio (2020), however, did not find a relationship between athletic identity and subjective career success in 313 retired college athletes and non-athletes. Furthermore, other research has concluded student-athletes at the Division I (Brown et al., 2000) and Division II (Harrison & Lawrence, 2003) levels can maintain high athletic identity and high academic identity and achieve success in both. However, student-athletes who have developed a primary identity as an athlete often expect to play professionally at rates as high as 75% (NCAA, 2016). Given that fewer than 2% of college student-athletes play sports professionally, this appears to be an unrealistic career choice that is indicative of an over-emphasis on the athletic role, limited world of work information, and lower career maturity. If student-athletes have not explored, considered, or prepared for careers outside of athletic participation, their ability to adapt to the changing world of work could prove to be more challenging (Tyrance et al., 2013).

**Career Adaptability**

The construct of career adaptability evolved out of life-span, life-space theory and has progressively replaced career maturity in career literature (Savickas, 1997; Super & Knasel, 1981; Super et al., 1996). Career adaptability entails having the readiness and resources to cope with developmental tasks, career transitions, and work traumas across the entire life span (Savickas, 2005). There are four primary dimensions of career adaptability: control, concern, curiosity, and confidence (Savickas, 2005). Control refers to taking responsibility and ownership for one’s career development; concern references looking ahead to one’s future career; curiosity is based on exploration of career options; and confidence is evidenced by the self-efficacy to undertake activities needed to achieve career goals (Savickas & Porfeli, 2012). There has been
growing support for the construct of career adaptability facilitating the three primary career development competencies of planning, exploring, and deciding (Creed et al., 2009; Hirschi, 2009; Koen et al., 2010). Career planning is one of the strongest positive indicators of successful transition out of sport (Warriner & Lavallee, 2008) so adaptability that facilitates career planning is crucial.

Given career adaptability’s centrality to effective career exploration, it is an important variable to consider when examining student-athlete career development. However, only one study has explicitly examined career adaptability with student-athletes (Shultz, 2017). Shultz did not conduct an intervention study but did examine the four dimensions of career adaptability and found that student-athletes rated confidence as their strongest dimension and rated curiosity as their lowest dimension. Earlier studies on career indicated that athletic identity is inversely related to career maturity (Brown & Hartley, 1998; Houle & Kluck, 2013; Murphy et al., 1996), It is reasonable to view the unrealistic rates of student-athletes expecting to become professional athletes as evidence of a lack of curiosity about the world of work that negatively affects exploratory behavior, diminished concern about their future, and a lack of control regarding their selection of career path. Student-athletes’ career confidence may also be negatively impacted, as they have deficits in self-perceived competence in their work habits, attitudes, and abilities (Cornelius, 1995; Good et al., 1993; Murphy et al., 1996; NCAA, 2016).

Outcome Expectations for Non-Athletic Careers

Outcome expectations regarding finding satisfying work in non-athletic careers is another key variable that may be affected by student-athletes’ overemphasis on their athletic role. Outcome expectations represent a key variable in social cognitive career theory (SCCT; Lent et al., 2002), denoting an individual’s beliefs about the consequences of performing a specific
behavior or set of behaviors (Lent et al, 1994). Outcome expectations are formed thorough past experiences, either direct or vicarious, and the self-perceived outcomes of these experiences (Bandura, 1996).

An individual will behave according to the value they place on a particular outcome in combination with the belief in their ability to produce that outcome (Bandura, 1996). Student-athletes’ career outcome expectations, especially expectations for careers outside of sport, have received minimal attention. However, it is reasonably hypothesized that developing a strong athletic identity is related to positive outcome expectations about athletic careers. The concomitant lack of work knowledge and negative social feedback about their academic and career involvement and capabilities outside of athletics is likely to lead student-athletes to have negative outcome expectations about their non-athletic career outcomes. However, helping student-athletes understand how the skills they have developed through participation in athletics have utility in non-athletic jobs may enhance both their career adaptability and vocational outcome expectations.

Transferable Skills

Mayocchi and Hanrahan (2000) defined transferable athletic skills as abstract skills learned in the sporting environment that are applicable to other facets of life or to another career. Athletic participation can facilitate development of skills in areas such as leadership, communication, teamwork, self-motivation, and organization (Danish et al., 1993; Mayocchi & Hanrahan, 2000; Petitpas & Schwartz, 1989; Petitpas et al., 1997; Petitpas et al., 2004, Van Raalte et al., 2017). When athletes realize they already have the skills and characteristics beneficial for success in non-athletic areas, they feel more capable and confident in pursuing those areas (Petitpas & Schwartz, 1989; Petitpas et al., 1997). However, it is common for
student-athletes to understand the application of these skills in athletics, but overlook how these skills could be applicable to other domains (Van Raalte et al., 2017). The failure to recognize how sport-related skills are valued or can be applied in the world of work could help explain student-athletes’ deficiencies in academic and career development (Ferrante & Etzel, 2009).

Providing student-athletes with information and opportunities to explore how their athletic skills transfer to the world of work increases their confidence in navigating non-athletic career and may improve student-athletes’ ability to use their skills in different settings (Petitpas et al., 1997). Similarly, understanding how skills they already possess can be applied in non-athletic careers may increase their sense of curiosity about other careers as well as their sense of control over making decisions about their careers. Therefore, although the specific relationship between transferable skills and career adaptability has not been studied, increasing confidence, curiosity, and control can increase career adaptability because these are core dimensions of career adaptability. Additionally, this increased self-knowledge and its applicability to the world of work may enhance outcome expectations about finding satisfying work in non-athletic fields.

Because of the close relationship between self-efficacy and outcome expectations (Ali et al., 2005), student-athletes’ career outcome expectations may be similarly positively impacted by increases in their career confidence. Van Raalte et al. (2017) implemented a career intervention on transferable skills for student-athletes and found significant increases in career self-efficacy for the experimental group relative to the control group, but they did not examine aspects of career adaptability or outcome expectations.

The eleven transferable skills of interest in this study come from the measure used by Shiina et al. (2003) and are highly face valid when considering the experiences of athletes. They include: communication, teamwork, leadership, ethics and conduct, problem-solving, self-
motivation, organization, physical skills and knowledge, coping, execution, and creativity. These skills are also relevant to many non-athletic careers, but student-athletes may not know what sort of jobs utilize their specific skill sets. This study examined whether student-athletes’ career adaptability and career outcome expectations would be enhanced by increasing their awareness of skills they have learned through sport and how they can applied in their potential careers. In addition, the relationship between specific transferable skills and career outcomes has not been examined in prior research and was addressed in the current study.

Brown (2017) examined 62 career intervention studies and found five critical components to be most effective in enhancing career readiness and choice-making. These five components are workbooks or written exercises, individualized feedback, modeling, attention to building support, and world-of-work information. Brown et al. (2003) reported that studies that did not include any of the critical components had an average effectiveness rating of .22, whereas those with one, two, or three of these components averaged .45, .61, and .99 respectively. The current intervention includes three of the critical components by utilizing individualized feedback, written exercises, and world-of-work information.

**Current Study Hypotheses**

Hypothesis 1: Student-athletes receiving a transferable skills career intervention that provides individualized feedback and prompts a written reflection to apply these skills in a non-athletic career domain will demonstrate greater gains in career adaptability than individuals in the control condition.

Hypothesis 2: Student-athletes receiving a transferable skills career intervention that provides individualized feedback and prompts a written reflection to apply these skills in a non-
athletic career domain will demonstrate greater gains in positive vocational outcome expectations than individuals in the control condition.

Hypothesis 3: Athletic identity will be significantly related to the gain scores in career adaptability with higher athletic identity related to smaller gains in career adaptability as a result of the intervention.

Hypothesis 4: Athletic identity will be significantly related to the gain scores in vocational outcome expectations as a result of the career intervention such that student-athletes with higher athletic identity will demonstrate smaller increases in vocational outcome expectations relative to student-athletes with lower athletic identity.

Exploratory Question: This study also explored the relationships between the 11 transferable skills and career adaptability and vocational outcome expectations. While it is expected that a number of the specific skill areas will be related to career outcomes, no specific hypotheses were made.

Method

Participants

Respondents were 50 undergraduate students from a university in the midsouth. There were 26 Division I student-athletes who received the intervention (i.e., treatment group); 24 respondents who did not participate in a varsity sport comprised the control group. Slightly more than two-thirds of the total sample (68%) were women, 58% were White, and the majority of students were in their freshmen (54%) or sophomore (22%) year. The control group had more female (91.7%) and racial minority (45.8% Black; 8.3% Hispanic/Latino) participants than the intervention group (46.7% female; 11.5% Hispanic/Latino; 7.7% Black; 3.8% Middle Eastern or North African; 3.8% Asian; 3.8% Other). Among the 26 student-athletes, teams represented
included track and field (23%), softball (15.4%), soccer (15.4%), baseball (11.5%), cross-country (11.5%), golf (11.5%), football (3.8%), basketball (3.8%), and tennis (3.8%). A majority of the student-athletes indicated it was somewhat likely (34.6%) or likely (23.1%) that they would compete professionally in their respective sport.

Measures

Student-athlete participants responded to questions regarding their gender, race/ethnicity, SES, academic class, and sport of participation, as well as their expectations of playing professionally. They also completed measures assessing athletic identity, career adaptability, and vocational outcome expectations. Non-student-athlete participants did not complete the assessment of athletic identity, the transferable skills inventory, or questions relating to sport participation, but completed all other measures.

Vocational Outcome Expectations (VOE)

The VOE scale (McWhirter et al., 2000) is a 12-item measure that assesses vocational outcome expectations. A sample item is “My career planning will lead to a satisfying career for me.” The VOE items are answered on a 4-point Likert scale ranging from 1(strongly disagree) to 4 (strongly agree) and averaged, with higher scores indicating more positive outcome expectations. Test-retest reliability over a 9-week period with a group of high school sophomores was .59 and Cronbach’s alpha was .83 (McWhirter et al., 2000). McWhirter et al. (2000) obtained a concurrent validity estimate of $r = .54$ using a 5-item measure of outcome expectations developed by Fouad and Smith (1996). The current study found Cronbach’s alpha statistics of .92 and .89 for Time 1 and Time 2.

Career Adapt-Ability Scale (CAAS)

The CAAS (Savickas & Porfeli, 2012) is a widely used assessment measuring career
adaptability. It has been normed on multiple adult samples across 13 countries. The CAAS comprises 24 questions answered on a 5-point Likert scale, ranging from 1 (not strong) to 5 (strongest), with higher scores indicating higher career adaptability. The items are framed such that respondents indicate the degree to which they consider the content of each item to be a strength of theirs. A sample item is “Planning how to achieve my goals.” The items are divided equally into four subscales that measure the adaptability dimensions of concern, control, curiosity, and confidence and scores can be obtained for the separate subscales or a total. The current study used the total score in the analyses. The CAAS has a reported internal reliability of .92, (Savickas & Porfeli, 2012). Analyses from the current study yielded Cronbach’s alpha coefficients of .96 at both Time 1 and Time 2.

**Transferable Skills Inventory (TSI)**

The TSI (Cornelius et al., 2001) is a self-report measure assessing student-athletes’ perceptions of the skills learned through their participation in sport that are transferable to other life domains. The original version consisted of 88 items, but Shiina et al. (2003) shortened it to the 44-item version (Van Raale et al., 2017) used in this study. The TSI is divided into 11 subscales, each representing a transferable skill: Communication, Teamwork, Leadership, Ethics and Conduct, Problem-Solving, Self-Motivation, Organization, Physical Health, Coping, Execution, and Creativity. The TSI subscale scores showed high levels of internal consistency in a pilot study of 313 student-athletes, yielding Cronbach’s alpha values ranging from .86 to .93 (Van Raalte et al., 2017). This measure was used in the intervention to prompt participants to identify their highest skills and consider how those skills were relevant in careers outside of sport.
**Athletic Identity Measurement Scale – Plus (AIMS-Plus)**

The AIMS-Plus (Cieslak, Fink, & Pastore, 2005) is a 25-item self-report measure assessing athletic identity. It is based on the original AIMS (Brewer et al., 1993) but was developed due to concerns about the small number of items and factor structure of the original AIMS (Brewer et al., 1993; Martin et al., 1994). The instrument assesses five factors: social identity, exclusivity, self-identity, negative affectivity, and positive affectivity that are combined for a total score. Responses can range from 0 (strongly disagree) to 7 (strongly agree). Higher scores indicate higher athletic identity, and a sample item is “I spend more time thinking about sport than anything else.” Content validity was provided through the use of 8-member panel of experts. Convergent validity with the AIMS was demonstrated in a study adapting the AIMS-Plus for use with Portuguese populations (Cabrita et al., 2014). A Cronbach’s alpha of .87 was found in the current study.

**Procedures**

Prior to collecting data to test the effectiveness of the intervention, a small pilot study was conducted to obtain feedback on the clarity of directions, timing, and the utility of the transferable skills feedback. Following revisions based on the pilot, data were collected from intervention and control group participants.

Student-athlete participants were initially approached through instructors of an introductory course focusing on the development of skills necessary for student success and a course on critical thinking as a professional; these course sections were exclusively reserved for student-athletes. The course instructors distributed a recruitment email to their students that allowed students to choose to have their data included in the study, but all students took part in the intervention as part of the course curriculum. Instructors from sections of the introductory
course open to all students (not reserved for student-athletes) also distributed the email informing their students of the option for participating in the study. The instructors of the introductory courses for control group participants had discretionary power to offer additional course credit for completing the study. Both groups were informed they must be at least 18 years old in order to take part in the study. Due to very low response rates from control group participants from those courses, additional participants were recruited through a subject pool offered to students in undergraduate lifespan development courses. These students received course credit if they completed both the pretest and posttest.

A total of 43 individuals began the pre-intervention test in the intervention group, and 4 individuals were terminated from completing the surveys due because they were younger than 18 years old. There were 26 intervention participants who provided matchable posttest data. There were 43 individuals in the control group who began the pretest, and 24 of those individuals provided matchable posttest data. As an additional note, all of the intervention group data were collected prior to the pandemic (March 2020), and a large majority of the control group participants \( n = 21 \) completed the study in the 2021 spring semester. There were equal number of freshman among the participants that completed both Time 1 and Time 2 and those who did not complete the posttest measures \( N = 27 \), however there were more upperclassmen who completed both Time 1 and Time 2 \( N = 24 \) than participants who did not \( N = 2 \). The participants who completed Time 1 and Time 2 reported higher social class on average \( M = 5.80 \) than the participants who did not \( M = 4.71 \). There were no significant differences found for gender or race/ethnicity between participants who completed both Time 1 and Time 2 and those who did not complete the study.

Student-athlete participants were assigned to the intervention group, and non-student-
athlete participants were assigned to the control condition. At Time 1, both groups completed the CAAS and VOE, and the intervention group also completed the AIMS-Plus. The demographics measure was presented to participants first, followed by the CAAS, then the AIMS-Plus, and ending with the VOE. As part of the intervention, student-athlete participants completed the Transferable Skills Inventory and received information on transferable skills during their regular class time. As participants scored their Transferable Skills Inventory, they received individualized feedback on their three highest-scoring transferable skills. This feedback defined each skill and delineated the types of tasks in which those skills could help them be successful. They also watched a video of former student-athletes and participated in two small-group discussions on skills and characteristics desired in sport and in the workplace. Participants were introduced to the Occupational Outlook Handbook (OOH) to explore how their skills aligned with needed skills for their occupations of interest. The in-person part of the intervention lasted roughly 45 minutes. Participants then completed a written assignment (class homework assignment) in which they were asked to describe how well their skills fit with their occupation of interest. This assignment was submitted during their next class period and received a set number of points (points were awarded for participation only and all participants received the same number of points) for the assignment. The intervention was modeled on the Career Exploration for Student-Athletes workshop created by Van Raalte et al. (2017) with the addition of exposure to world-of-work information through OOH and the written reflection. The video shown during the presentation depicted former student-athletes talking about how a number of specific skills developed as an athlete, such as competitiveness, effective communication, and leadership, have helped lead to their current career success. The control group completed the pretest and posttest with no additional information. Both groups provided Time 2 data roughly
one week after they provided their Time 1 data. This time frame was determined by the scheduling availability in the skill development courses.

Results

Cases in which pretest and posttest data could not be matched were excluded from further analysis. There were no univariate outliers identified using the cutoff of plus or minus three standard deviations. There were no multivariate outliers identified using Mahalanobis Distances, the most commonly used detection method for multivariate outliers (De Maesschalck et al., 2000). Primary variables in this study were found to be normally distributed and within acceptable parameters for skewness and kurtosis.

Descriptive statistics for study variables (not including transferable skills) are presented in Table 1. The relationships between the demographic variables of gender, academic class standing, race/ethnicity, and SES and the dependent variables to assess whether any of these variables would need to be controlled for in subsequent analysis. Gender and race were each dichotomized and point-biserial correlation coefficients were obtained between gender and race/ethnicity and the dependent variables. Spearman’s rank-order correlations were conducted between SES and academic class standing and the dependent variables. There were no significant correlations, therefore none of these variables were included as covariates in the primary analyses.
Table 1.

*Means and Standard Deviations for Primary Study Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention</th>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
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<tr>
<td><strong>1. CAAS Time 1</strong></td>
<td>3.44</td>
<td>.63</td>
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<tr>
<td><strong>2. CAAS Time 2</strong></td>
<td>3.69</td>
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<tr>
<td><strong>3. VOE Time 1</strong></td>
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<tr>
<td><strong>4. VOE Time 2</strong></td>
<td>3.32</td>
<td>.36</td>
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<tr>
<td><strong>5. AIMS Time 1</strong></td>
<td>4.78</td>
<td>.61</td>
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*Note.* CAAS Time 1 – Pretest Career Adapt-Ability Scale; CAAS Time 2 – Posttest Career Adapt-Ability Scale; VOE Time 1 – Pretest Vocational Outcome Expectations; VOE Time 2 – Posttest Vocational Outcome Expectations.

To test the effect of the intervention on participants’ self-reported CAAS and VOE scores, difference scores between Time 1 (pre-intervention) CAAS and VOE scores and Time 2 (post-intervention) were computed and used as the dependent variables in separate ANOVA tests.

Hypothesis 1 stated that the student-athletes who received a transferable skills intervention would experience greater gains in career adaptability scores as compared to the control group participants who did not receive the intervention. Difference scores for career adaptability were entered as the dependent variable, and group was treated as the fixed factor.

The student-athletes demonstrated greater gains ($M = .25, SD = .61$) in career adaptability over the control group ($M = -.077, SD = .44; F (1, 48) = 4.57, p = .038; \eta^2_p = .087$), indicating support for Hypothesis 1. A medium effect size was observed per the benchmarks provided by Cohen (1988).
Hypothesis 2 postulated that student-athletes receiving the transferable skills intervention would experience greater gains on the measure of vocational outcome expectations over the control group. Difference scores for the vocational outcome expectations measure served as the dependent variable. The student-athletes exhibited greater gains ($M = .97, SD = .87$) on the measure of vocational outcome expectations relative to the control group ($M = .45, SD = .47$; $F(1, 46) = 6.56, p = .014; \eta^2_p = .125$), supporting Hypothesis 2. A medium to large effect size was observed per the benchmarks provided by Cohen (1988).

Hypothesis 3 proposed that athletic identity would account for a significant amount of variance in the gain scores in career adaptability, with higher athletic identity related to smaller gains in career adaptability as a result of the intervention. A multiple linear regression was calculated to predict the career adaptability difference scores based on athletic identity scores. Only data from the student-athletes who received the intervention were used in this analysis. The coefficient for athletic identity was found to have a nonsignificant result ($\beta = .063, SE = .203; t(23) = .305, p = .763$) indicating that athletic identity did not have a significant relationship with increases in career adaptability. Furthermore, the positive direction of the coefficient for athletic identity was inconsistent with predictions. This study hypothesized that higher athletic identity would have a deleterious effect on gains made from the intervention, and this hypothesis was unsupported.

Hypothesis 4 posited that athletic identity would account for a significant amount of variance in the gain scores in vocational outcome expectations, with higher athletic identity related to smaller gains in vocational outcome expectations as a result of the intervention. A multiple linear regression was executed to predict the vocational outcome expectations difference scores based on athletic identity scores. Athletic identity was not significantly related
to gains in the measure of vocational outcome expectations ($\beta = .237, SE = .291; t(22) = 1.15, p = .264$). Hypothesis 4 was not supported. Similar to Hypothesis 3, the positive direction of the coefficient for athletic identity was also inconsistent with predictions.

Additional exploratory analyses included correlations between each transferable skill score and the posttest scores for the career outcome variables. The majority of the correlations that were tested were nonsignificant, and because this analysis was included only for exploratory purposes, it will not be discussed further.

**Discussion**

This study tested the effectiveness of an intervention focusing on transferable skills in improving student-athletes’ adaptability and vocational outcome expectations. The findings from this study indicated the intervention group achieved statistically significant gains on both career measures relative to the control group. The findings of this study are consistent with prior research on the positive effects associated with awareness of how one’s skills developed through athletics can be transferable outside of sport (Danish et al., 1993; Mayocchi & Hanrahan, 2000; Petitpas & Schwartz, 1989; Petitpas et al., 1997; Petitpas et al., 2004, Van Raalte et al., 2017). However, career adaptability and vocational outcome expectations are both understudied constructs with student-athletes, and this study is the first to offer evidence that a transferable skills intervention can enhance these important career development variables.

Even with a relatively small sample size, these findings are strongly encouraging and warrant continued focus on the utility of transferable skills. It appears that in a short 45-minute, one-session intervention, improvements can be observed both in career adaptability (concern, curiosity, control, confidence) and positive outcome expectations for careers outside of active athletic participation. Based on life-span, life-space theory as well as student-athlete career
development, many of the student-athletes had likely given insufficient or little consideration to their future careers or their identity outside of athletics prior to the intervention. Even after the intervention, the CAAS and VOE scores for the student-athletes were still lower than those for the control group participants, but were much closer. Post-hoc analyses revealed the significant differences between intervention and control groups at the pretest for career adaptability ($F(1, 48) = 5.98, p = .018$) and vocational outcome expectations ($F(1, 47) = 13.54, p = .001$) were no longer present at the posttest ($F(1, 48) = .552, p = .461; F(1, 47) = 2.78, p = .102$). The effectiveness of the intervention in raising self-reported career adaptability is likely due to these athletes being able to understand how their skills and personal characteristics developed through athletics can translate into success in careers outside athletics. Greater self-knowledge should increase their sense of control and confidence, and possibly even their sense of curiosity for other careers. The translation of their skills and traits to other domains is representative of adaptability.

The data regarding the intervention’s effect on increasing vocational outcome expectations were also encouraging. Following the intervention, the student-athletes reported believing they would be more satisfied and in control with their future careers. With more positive anticipated consequences of engaging in career-related behaviors, these individuals are more likely to engage in such behaviors. The intervention in this study emphasized the success that former athletes have had by capitalizing on their skills that helped make them successful athletes. Those former athletes also communicated they were also motivated and satisfied in their career pursuits. The student-athletes exposed to the intervention in this study were thus likely able to see themselves as fulfilled and in control of their own future careers. These findings serve as further evidence that transferable skills are a valuable component of career programming for student-athletes.
Athletic identity was hypothesized to serve as an obstacle to gains made in career adaptability and vocational outcome expectations. Student-athletes who strongly identify as an athlete were expected to be less receptive to the information included in the intervention design and show less change on the career measures. Hypotheses 3 and 4 were both unsupported by the data, and the suggested direction of the relationships between athletic identity and the selected career outcome variables was contrary to the hypothesized direction were predicted. There remains much to be understood about the relationship between athletic identity and student-athlete career development. A significant amount of the prior research has indicated negative relationships between athletic identity and various measures of career development (Alfermann et al., 2004, Chartrand & Lent, 1987; Giannone et al., 2017; Good et al., 1993; Grove, et al., 1997; Murphy et al., 1996; Nelson, 1983; Petitpas & Champagne, 1988). However, others have found student-athletes can maintain both high athletic identity and high academic identity (Brown et al., 2000; Harrison & Lawrence, 2003).

A possible explanation for these different findings is instrumentation. This study utilized the AIMS-Plus to assess for athletic identity; most of the other studies used the original version of the AIMS. The AIMS-Plus includes additional items not contained in the AIMS, such as “My participation in sport is a very positive part of my life,” which allows for the individual to recognize the benefits of their athletic role without necessarily sacrificing other parts of their life. This item is in contrast to AIMS items such as “Sport is the only/most important thing in my life,” which suggests a choice of one’s athletic self over other parts of self. In this way, athlete participants in this study may have had scores indicating higher athletic identity scores that do not preclude higher academic identities or other identities, as was suggested by the findings of Brown et al. (2000) and Harrison and Lawrence (2003).
Another possible explanation for the discrepancy between this study’s findings and prior research is that student-athletes with higher athletic identities may have engaged in less career and self-exploration prior to this intervention and therefore had more room to grow as a result of the intervention. Student-athlete participants may also have responded to the items of the vocational outcome expectations measure with an athletic career in mind as opposed to a career outside athletics. Although the hypotheses surrounding athletic identity’s influence on gains in career development were not supported, the findings from this study can be interpreted such that student-athletes who identify heavily with their athletic identity can still benefit from similarly designed interventions.

The current research expanded upon prior research by being one of few studies implementing career development interventions with active student-athletes. This study remains the only study, to the author’s knowledge, examining the effect of a transferable skills intervention on student-athletes’ career adaptability and vocational outcome expectations. Career adaptability and vocational outcome expectations are apt constructs for further research given the greater levels of instability and change in the contemporary work environment (Lent & Brown, 2013; Cortellazzo et al., 2020). Interventions capitalizing on transferable skills are also particularly desirable because they efficiently capitalize on personal resources student-athletes already have.

**Limitations and Future Research Directions**

The sample size was a little smaller than desired although still suitable for allowing the detection of significant results. Post-hoc power analyses indicated a power of .56 for the career adaptability results and .71 for the vocational outcome expectations measure. This is underpowered based on standard research guidelines of .8 power, This sample size precluded the
examination of meaningful differences by race, academic year, and sport of participation. Since
the analyses for athletic identity were only conducted with the data from the student-athletes, the
sample size was quite small for these analyses.

Another limitation of the current study was the discontinuous data collection. Data from
both timepoints for the entirety of the student-athlete sample were collected prior to the COVID-
19 pandemic. Nearly all of the control group (N = 21), or the non-athletes, provided data for both
timepoints after the COVID-19 pandemic began. These students provided data during a time of
significantly greater uncertainty, and Son et al. (2020) found that 71% of college students
reported increased anxiety and stress during the pandemic. Unger (2007) argued that mental
health issues are the leading impediment to academic success, impacting motivation,
concentration, and social interactions. The pandemic has also resulted in millions of people
losing their jobs (Barone, 2020), and the pandemic has dramatically shifted the way work is
being conducted. The control group’s self-reports of career adaptability declined slightly (-.07)
from the pretest to the posttest and may have been negatively impacted by the current work and
social climate.

The majority of the participants in the control group came from a lifespan development
class. While this information was not collected, students in this class have typically declared a
major since this class is required for education-related majors. Declaring a major could be
indicative of greater levels of career development prior to the study and might account for their
higher scores, even at posttest, on the career variables. In the future, it would also be a truer
comparison to assess athletes receiving the intervention against other athletes who do not receive
the intervention. Logistically this was not feasible at the current institution.
In addition to student-athletes comprising both the control and intervention groups, future research could build on the current study by increasing the sample size in order to be able to analyze differences in intervention effectiveness across demographic categories such as race/ethnicity, gender, and academic year. Transferable skills are worth understanding at a deeper level, as they offer a strengths-based approach from which athletes can build a sense of identity outside athletics. Similarly, examining career adaptability’s specific dimensions of control, concern, curiosity, and confidence was outside the scope of the hypotheses in this study, and future research should aim to understand which of these aspects were most impacted to develop more effectively targeted interventions. This could be especially important as recent legislation has been passed allowing student-athletes’ to capitalize on additional potential revenue streams. This change could have significant impact on student-athletes’ engagement in career development processes.

Future studies could also add to the literature by collecting data over longer periods of time. This study included repeated measures, however it only measured outcomes over the course of roughly one week. Longitudinal studies spanning greater periods of time could offer more dynamic perspectives on the relationship between athletic identity, career outcome variables, and transferable skills. In an ideal situation, such research could collect data both during athletic careers and post-retirement, and then possible connections could be made pre- and post-employment as the student-athletes entered careers that did not include athletic participation. This would help address the question of whether the gains from the intervention actually facilitated a smooth transition into the working world.
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