The Relationship Between Professional Development Engagement and Career Decision Making Self-Efficacy, and Athletic Identity in College Students Vs. College Student Athletes

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THE RELATIONSHIP BETWEEN PROFESSIONAL DEVELOPMENT ENGAGEMENT AND CAREER DECISION MAKING SELF-EFFICACY, AND ATHLETIC IDENTITY IN COLLEGE STUDENTS VS. COLLEGE STUDENT ATHLETES

A DISSERTATION

Submitted to the Faculty of Montclair State University in partial fulfillment of the requirements for the degree of Doctor of Philosophy

by

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THE RELATIONSHIP BETWEEN PROFESSIONAL DEVELOPMENT ENGAGEMENT, CAREER DECISION MAKING SELF-EFFICACY, AND ATHLETIC IDENTITY IN COLLEGE STUDENTS VS. COLLEGE STUDENT ATHLETES

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ABSTRACT

There has been limited research that focuses on Division III college student athletes and the career development process. Although previous researchers have studied the relationship between athletic identity and career decision making self-efficacy (CDMSE) among college student athletes, results have been inconsistent, with different researchers finding inverse, positive, or no relationships between variables. In addition, numerous researchers have examined career development among college student athletes. However, there has been no research to date that studies professional development engagement (PDE) and college student athletes. In addition, the majority of career development studies involving college student athletes have focused on either Division I or II schools. To address this gap, the current research project utilized three variables (athletic identity, CDMSE, and PDE) to try to gain an understanding of factors that may impact the career development process for traditional age college students (College Student Non-Athletes; CSNA) and college student-athletes in a Division III school. Chickering’s Identity Development Theory was used as a lens to examine identity development among the populations of interest.

The researcher conducted a quantitative study at an NCAA Division III university in the northeastern region of the United States to examine the relationship between PDE and CDMSE among college student athletes (research question 1). Furthermore, this research was designed to determine if the association between PDE and CDMSE changed when controlling for athletic identity (research question 2). Lastly, the author examined this same set of variables and controls (the association between PDE and CDMSE when
controlling for athletic identity) to see if there was a significant difference between college student athletes vs. CNSAs (research question 3). NCAA Division III student athletes and CSNA completed an online survey consisting of three instruments (Athletic Identity Measurement Scale, Career Decision Making Short-Form, and Professional Development Engagement Scale) and a demographic questionnaire.

The results suggest that higher levels of PDE lead to higher level of CDMSE, and that higher levels of athletic identity were related to higher levels of CDMSE when controlling for PDE. Furthermore, in both the student athlete and the CNSA samples, there was no significant relationship difference in the association between PDE and CDMSE when accounting for athletic identity. Additionally, implications for research, practice, and teaching are discussed.
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The Relationship Between Professional Development Engagement and Career Decision Making Self-Efficacy, and Athletic Identity in College Students vs. College Student Athletes

Chapter 1: Introduction

Entering and completing college is an important milestone for many individuals, as obtaining a college degree can help people achieve social, emotional, and career goals. Colleges help students achieve their goals by providing a plethora of academic and social experiences for students. One type of social experience available to college students is the option to participate in inter-collegiate sports. Regardless of the type of sport, many athletes find athletics to be a mainstay of the collegiate experience. Although it can be argued that students who combine academics and participation in college sports are more successful in life (Shakib, Veliz, Dunbar, & Sabo, 2011), it has also been suggested that participating in a college sport may negatively affect a student’s academic and/or career development (Watson & Kissinger, 2007).

Career Development and College Athletes

The process of career development has been recognized by various researchers as one of the primary tasks for students while attending college (Jang, Jung, Kim, Lee, & Lee, 2014; Kaye & Smith, 2012; Paulsen & Betz, 2004). Most students enter college with the goal of receiving a degree and then transitioning to a career or continuing their education at some point after graduation. Colleges are set up in part to provide and encourage opportunities for career development through academics (e.g., courses and research), informal social interactions (e.g., meeting new people), and group events (e.g.,
clubs and organizations). Part of college students’ career development process involves defining their own identity. Erikson (1968) defined and explored identity in his psychosocial stages of development. According to his theory, students of traditional college age are experiencing the stage/crisis of identity versus role confusion. Chickering (1969) theorized that for students, there are several stages of identity development that occur in college, and that these stages can have a direct impact on career development. Arnett (2002) examined the transitional period of the college student years, terming this period “emerging adulthood.” These three theories are similar insofar as they underscore the commonalities that occur in identity development during the college experience.

College student athletes are a unique subpopulation within the larger group of traditional age college students (college student non-athletes; CSNA). Like all college students, these student athletes engage in the career development process via academic, social, and group events in an effort to prepare for life after college. However, college student athletes have many responsibilities that could impact their access to and attitudes toward career development opportunities such that their experiences are different from those of college students (Kaye & Smith, 2012). For instance, college student athletes have to juggle the responsibilities associated with their sport alongside their responsibilities as a student. Because of the various demands and commitments associated with being an athlete, many college student athletes do not have the opportunity to engage in career related opportunities (Fogarty & McGregor-Bayne, 2008). Other aspects of being an athlete also can impact their identity development, such as coaches’ or teammates’ recommendations of suggested career trajectories.
instance, a teammate may be recruited to participate in semi-professional athletics, which could be seen as a potential career trajectory for college athletes through the process of social comparison. Along these same lines, if a student athlete who is admired by other team members winds up pursuing a particular major, those other team members may also choose to adopt the major of the teammate (Fogarty & McGregor-Bayne, 2008; Kaye & Smith, 2012). In sum, college student athletes are likely to face unique career development challenges (Burns, Jasinski, Dunn, & Fletcher, 2012) that are not faced by college students who are not athletes.

**Background**

College students move through many milestones as they transition from adolescence into young adulthood (Kim, Jang, Jung, Lee, & Lee, 2014). One of the most important developmental areas for students in college is career development (Paulsen & Betz, 2004). The National Career Development Association (2008) defined career development as “the total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to influence the nature and significance of work in the total lifespan of a given individual” (p. 2). A primary goal for most college students is to leave college feeling prepared to transition to a career after college (McAtee, 2012). Ideally, students spend their years in college developing or discovering an academic interest, which is eventually followed by some type of career decision.

College student athletes also have similar goals regarding career decisions, yet when compared to students not involved in competitive or varsity athletics, they
experiences a very different career development process (Stambulova, Alfermann, Statler, & Cote, 2009). College student athletes engage in many daily tasks and activities identical to other college students. However, due to demands and commitments of their sports, student athletes have the added challenge of balancing athletic and academic responsibilities (Chung, 2002). Because college student athletes have strict and structured schedules, they often have less time and opportunity to choose, explore, and engage in different academic on-campus and/or off-campus career related opportunities (Fogarty & McGregor-Bayne, 2008) as compared to CSNA.

In addition to time and schedule restraints, college student athletes’ prospective career paths are often influenced by the recommendations of coaches and other teammates (Stambulova et al., 2009). For example, a college student baseball pitcher may have a direct plan to pursue a career in either minor league or major league baseball after college because his or her coach has made the suggestion that he or she “has potential.” In this particular situation, the student athlete may not feel the need to explore other career building opportunities or invest effort in other career building opportunities. This example shows how many college student athletes may face problems regarding career development (Burns, Jasinski, Dunn, & Flecher, 2012).

**Statement of the Problem**

As noted above and clarified in the review of literature in chapter two, one problem area that college athletes generally face is feeling less prepared and confident than CSNA to transition to post college life (Watson & Kissinger, 2007). Previous research studies have determined that based on various factors such as athletic
responsibilities and time commitments, career influences from teammates and coaches, and limited career advisement, it may be that college student athletes lack the experience and exposure to applied activities of career exploration and decision-making when compared to CSNA (Watson & Kissinger, 2007). However, behavioral experiences related to a possible career through the process of professional development engagement (PDE) have yet to be considered within the counseling literature as a potential influence in the disparity between college athletes’ and CSNA post-college transition confidence. Examples of PDE include internships, externships, on-site interview practice, and career fairs. Engaging in these activities may influence the career development process.

Although the research literature recognizes the role that PDE experiences play throughout college, there has been very little research that has focused specifically on college student athletes and their PDE experiences as compared to CSNA. The work that has been done in this area has been primarily retrospective qualitative investigations of former athletes concerning their thoughts and feelings of how PDE positively influenced their career development (e.g. Betz & Voyten, 1997; Komarraju, Swanson, & Nadler, 2014; Nota, Soresi, & Zimmerman, 2004; Swanson & Tomkovick, 2012). As such, it is important to study and understand the practice and influence of PDE on career self-efficacy among CSNA and college student athletes during their collegiate experiences to determine the possible short-term impact of PDE.

One way to examine the preparedness a college student has for post college career experiences among both athletes and CSNA is to consider career decision-making self-efficacy (CDMSE). Taylor and Betz (1983) defined CDMSE as an “individual’s belief
that they can successfully complete tasks necessary to make a career decision” (p. 63). Career decision-making self-efficacy and self-efficacy in general are important components of the career development process. Briefly, research has yet to yield consistent findings regarding whether or not there is a significant difference in levels of CDMSE between athletes and CSNA (Brown & Hartley, 1998), and it has not been determined if there is a relationship between PDE and CDMSE. In essence, college athletes may have different career development journeys than CSNA during college, and the differences can potentially become disadvantages for athletes in their transition to life after college.

**Research Questions and Hypotheses**

The following research questions and hypotheses were put forward:

**Question 1:** Is there an association between Professional Development Engagement (PDE) and Career Decision-Making Self-Efficacy (CDMSE) among college students?

**H1:** There is a significant association between PDE and CDMSE among college students.

**Question 2:** Is there an association between PDE and CDMSE among college students when controlling for athletic identity?

**H2:** There is a significant association between PDE and CDMSE among college students while controlling for athletic identity.

**Question 3:** Is there a significant difference in the association between PDE and CDMSE when controlling for athletic identity in athletes vs. CSNA?
H3: There is a significant difference between athletes and CSNA in the association between PDE and CDMSE when controlling for athletic identity in athletes vs. CSNA.

**Significance of the Study**

The results of this study will provide research that contributes to the existing literature related to college students, college student athletes, athletic identity and career decision-making self-efficacy (CDMSE). Findings may provide more clarity to mixed results from previous studies examining athletic identity and CDMSE in college student athletes. To date, there has been no research focusing on professional development engagement (PDE) and college student athletes. The inclusion of PDE, an under-researched construct, in the current research will open a new line of inquiry about a possible influencing factor of CDMSE across college students and college student athletes. Furthermore, the sample population, college students and college student athletes at a Division III school has not been studied previously with regard to these constructs. Therefore, any findings will enhance our limited understanding of how CDMSE develops in this population. In addition, the potential presence and role of athletic identity has not been examined previously among college students who are not on athletic teams. Seeing how athletic identity may or may not impact CDMSE among all college students will, again, add to our understanding of career development in this population.

Counseling professionals will be able to utilize the results of the current research when working with Division III college students and college student athletes around
career development. For example, student affairs counselors (e.g., career counselors, study abroad advisors, community service counselors) will have current research that could support the development of new initiatives to increase students’ CDMSE via individual, small group, and large group events. Additionally, results from this study may reinforce current practice and behaviors of various student affairs professionals (evidence-based research) across colleges (e.g., career counselors offering resume and cover letter workshops, hosting career fairs). Because this study examines juniors, seniors, and fifth-year seniors, the results could suggest the importance of being proactive in developing different programs that specifically target upperclassmen and/or students in specific years of school. In sum, the findings of this study should lead to more effective outreach and support from college professionals and greater self-awareness and proactivity by college students and college student athletes, thus resulting in improved career exploration and opportunities for Division III students.

Theoretical Framework

The theoretical lens used to conceptualize college students and college student athletes’ career development in this study is Arthur Chickering’s Identity Development Model (Chickering, 1969). To better understand the identity formation and progression of college students, Chickering introduced a framework for describing how identity develops through an educational lens (Chickering, 1969; Chickering & Reisser, 1993). Chickering chose seven fluid vectors as opposed to concrete stages to symbolize that the college student developmental process is not always linear (Chickering, 1969). In other words, college students can move through vectors at different times of their college
careers (Chickering & Reisser, 1993). These seven vectors include developing competence, managing emotions, moving from autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity (Chickering & Reisser, 1993). According to the model, the first four vectors (developing competence, managing emotions, moving from autonomy toward interdependence, developing mature interpersonal relationships) typically are of primary concern during the first two years of college. Vectors five and six (establishing identity and developing purpose) are usually more focal during the last two years for college students (Valentine & Taub, 1999). Vector seven (developing integrity) typically occurs in congruence with vector six and beyond the college years. The movement from one vector to another most often characterizes an increase in a college student’s skills, strengths, confidence, awareness, and complexity (Evans, Forney, Guido, Patton, & Renn, 2010). The first four vectors are essentially the groundwork for the last three vectors in terms of the establishment of a college student’s identity (i.e., perception of one’s self).

Several studies have shown varying levels of correlations exist between athletic identity and career development of college student athletes (Beamon, 2012; Coakley, 2009; Hinkle, 1994; Nelson, 1983; Petitpas & Champagne, 1988). Some studies have shown that the stronger the athletic identity, the less energy, effort, and time that will be spent by the athlete on career development while in college (Burns et al., 2012; Horton & Mack, 2000). In contrast, other studies have shown that there is no significant relationship between the level of athletic identity and career development among college
student athletes (Brown, Glastetter-Fender, & Shelton, 2000; Brown & Hartley, 1988; Martens & Cox, 2000). These inconsistent results suggest that the athletic identity of college student athletes may not be the only factor impacting their career development, and that the relationship may vary in different segments of college student athletes. Regardless, it will be argued in the literature review portion of this document that ability/past performance in athletics helps to contribute to CSNA and college student athletes’ level of self-efficacy, which then relates directly to career goals or potential career goals. In other words, an argument will be advanced that career decision-making self-efficacy (CDMSE) may influence the career development process for college student athletes.

Furthermore, higher CDMSE has been shown to correlate with specific career development tasks such as self-appraisal, gathering occupational interests, goal selection, and planning (Paulsen & Betz, 2004). Various researchers have investigated the relationship between being a college student athlete and CDMSE with respect to the influence of athletic identity on career development. Some of the research in this area suggested that college student athletes generally have lower levels of CDMSE than CSNA (Brown & Hartley, 1998; Cox, Sandstedt, Martens, Ward, Webbers, & Ivey, 2004), although other authors (Fogarty & McGregor-Bayne, 2008) suggested that the linkages are less than clear. Despite the mixed results within the literature, it can be argued that if athletes have lower levels of CDMSE relative to college student non-athletes (CSNA), a stronger athletic identity may lead college student athletes to avoid career decision-making tasks, such as choosing a major, learning about their own skills
and interest, and seeking out relevant career information (Burns, et al., 2012; Taylor & Betz, 1983; Watson & Kissinger, 2007).

Other factors also may influence career decision-making among college student athletes. For example, professional development engagement (PDE) may potentially impact the relationship between athletic identity and CDMSE. Blau and Snell (2013) defined PDE as “the level of undergraduate engagement in professional development” (p. 689). PDE consists of the career-related behaviors or acts that college students engage in to prepare for life after college (Blau & Snell, 2013). Researchers have determined that higher levels of PDE help college students have smooth transitions from college to career (Bowers, Dickman & Fuqua, 2001). Furthermore, PDE has been shown to enhance college students’ chances at being considered for employment after college (Betz & Voyten, 1997; Bogdana et al., 2012; Komarraju, Swanson & Nadler, 2014; Nota, Soresi & Zimmerman, 2004; Swanson & Tomkovick, 2012). PDE has also been shown to be a conduit through which students can obtain the skills necessary to be successful in careers, including (but not limited to) communication skills, social skills, and etiquette skills (Swanson & Nadler, 2014).

Prior to this research study, there had been no quantitative investigation to examine whether levels of PDE could impact levels of CDMSE among college students and/or college student athletes. Similarly, there had been no research taking the inquisition a step further and determining if, while controlling for athletic identity, the relationship between PDE and CDMSE is significant. In order to address this gap in the literature, the current project explored if there is a relationship between PDE and CDMSE
among college students and college student athletes. This project sought to investigate if while controlling for athletic identity, there is a significant relationship between PDE and CDSME, as well as if there was a difference in the relationship for college student athletes vs. students who were not athletes.

Organization of the Dissertation

In the remaining four chapters of this dissertation, I will review the relevant literature, provide a methodology for this study, present and interpret the study results, and discuss the findings, implications, and potential directions future researchers may wish to pursue. In chapter two, I provide results of previous relevant studies, relate my study to the larger ongoing dialogue about the topic, provide a framework for the importance of the study, and provide a benchmark for comparing the results of my proposed study with other findings (Creswell, 2003). In chapter three, I provide an explanation of the methodology used for this study. Information about the research design, variables, instrumentation, sample, the data collection, and the data analysis procedures are discussed in the methodology chapter. In chapter four, I report the results of the statistical analysis conducted. Chapter five includes an in-depth discussion of the results, implications of the study findings, limitations of the study, and recommendations for future research.

Definition of Terms

The following definitions are used for this particular examination.

Athletic identity. The amount of identity an individual considers him/herself as an athlete (Brewer, Van Raalte, & Linder, 1993).
Career decision-making self-efficacy (CDMSE). An individual’s degree of belief that he/she can successfully complete tasks necessary to making career decisions (Taylor & Betz, 1983).

College athletes. Students who are enrolled in a college/university and participate in an organized and competitive in collegiate sport supported by the school (Carter-Francique, Harts, & Steward, 2013).

College student non-athletes (CSNA). Individuals who enroll in college immediately after graduation from high school, pursue college studies on a continuous full-time basis at least during the fall and spring semesters, and complete a bachelor’s degree program in four or five years at the age of 22 or 23. These individuals do not participate in a NCAA Division I, II and/or III athletic sport (Hoyert, Sudlow, & O’Dell, 2009).

Division I. One of the three levels of intercollegiate athletics recognized by the National Collegiate Athletic Association (NCAA). Division I must field teams in at least seven sports for men and seven for women or six for men and eight for women, with at least two team sports for each gender. Division I schools must meet minimum financial aid awards for their athletics program, and there are maximum financial aid awards for each sport that a Division I school cannot exceed.

Division II. One of the three levels of intercollegiate athletics recognized by the NCAA. Division II institutions have to sponsor at least five sports for men and five for women (or four for men and six for women), with two team sports for each gender, and each playing season represented by each gender. There are contest and participant
minimums for each sport as well as scheduling criteria. For example, football and men's
and women's basketball teams must play at least 50 percent of their games against
Division II or Football Bowl Subdivision (formerly Division I-A) or Football
Championship Subdivision (formerly Division I-AA) opponents. For sports other than
football and basketball, there are no scheduling requirements.

**Division III.** One of the three levels of intercollegiate athletics recognized by the
NCAA. Division III athletics features student-athletes who receive no financial aid
related to their athletic ability (i.e., no athletic scholarships; National Collegiate House of
Athletic Association, 2015).

**Professional development engagement (PDE).** The amount of applied activities
related to career in which an individual participates (Blau & Snell, 2012).
Chapter 2: Literature Review

In this chapter, I will present relevant research related to college students and college student athletes, career development, professional development engagement, and athletic identity. Certain gaps in the previous bodies of research are demonstrated, thereby underscoring the necessity for this research study. Each variable researched (athletic identity, career decision making self-efficacy, and professional development engagement) is discussed in detail in order to provide an in-depth understanding of the concepts in question.

The chapter begins with an introduction of identity development for both college students and college student athletes. As part of this discussion, an explanation of two different aspects of college students and college student athletes’ identity that might influence career development is presented (i.e., college student identity and athletic identity). Following this, the roles of career decision-making self-efficacy and professional development engagement are explained as they relate to the career development process for college student athletes. The theoretical model that supports the foundation of this research study (Chickering’s Identity Developmental Model, 1969) is then discussed, with specific emphasis on how this theory drove the research study.

It should be noted that researchers have been examining some of my constructs of interest for decades (e.g., CDMSE), whereas constructs like PDE have received very little research attention. The earlier dated research included in this chapter (i.e. Holland, 1997; Solberg, Good, Fischer, Brown, & Nord, 1995) provides foundational work for this project, and although there has been more recent research published on the topic which
also will be included, the older foundational literature is still viewed as seminal. Since there has been a limited amount of current research related to the specific topic of this project, the past research provides supportive information and layers of literature for current researchers to build on. Additionally, the inclusion of both past and available current literature allows for a level of continuity between the two and adds strength to the scope of this research project. Although there is a notable past research to consider, additional studies are also necessary to increase our understanding of the relationship between PDE and CDMSE among college student athletes and CSNA.

**College Students, College Student Athletes, and Identity Development**

Along with various developmental progressions such as social, emotional, and psychological growth, most students attend college with one common goal in mind: upon receiving a degree from a college or university, they hope to have adequately planned and prepared for their next stage in life (McAtee, 2012). Whether that next stage includes the work force, military service, a trade, or continuing education, typical students hope to be developmentally ready to flourish in their field of interest. Regardless of the post-secondary steps students choose, researchers have found that the primary reason students (which includes student athletes) attend college is to attain a job (McAtee, 2012). Generally, many students enter college with a major in mind, while others use their collegiate experience to explore and determine their future career path. Colleges are designed in a way that presents students with a plethora of academic options to explore and extracurricular organizations to join, with professionals in each area to teach and guide students as they transition towards their career of choice (McAtee, 2012).
During their years in college, the career search process for the typical student is one of the most important aspects of their life (Yang & Gysbers, 2007). For many students, it is the first time they will make a decision pertaining to a full-time job which will inevitably help them form a new professional identity. There has been a significant amount of research conducted to gain an understanding of students’ career exploration process as well as their transition from college student to career professional. One notable example of this body of work is a 1995 study that was performed to determine average college students’ level of self-efficacy throughout the career search process. To obtain the appropriate data, students were asked to partake in a variety of career search activities. These activities included career search inventories, personality inventories, meetings with academic advisors and research (Solberg, Good, Fischer, Brown, & Nord, 1995). The outcomes of the project suggested that engaging in the career search process increased college students’ awareness and preparedness for post-collegiate careers (Solberg et. al., 1995).

Researchers also have found that when the career search process is not conducted effectively, psychological distress concerning the career search process can develop (Cote, Saks & Zikic, 2006). In other words, psychological distress can be related to lower levels of career search and self-efficacy. Some of the psychological symptoms of distress in these situations included depression, stress, and anxiety (Yang & Gysbers, 2007).

A study was performed to gain an understanding of individuals’ perceptions of career transitions in relation to their specific type of career search self-efficacy and
psychological distress (Yang & Gysbers, 2007). The psychological resources included readiness, confidence, control, support, and decision independence (Yang & Gysbers, 2007). A total of 191 college students from a large Midwestern university who anticipated graduating college within the year completed the Career Search Efficacy Scale (CSES; Solberg, Good, Nord, Holm, Hohner, Zima, 1994), Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), and the Career Transition Inventory (CTI; Heppner, 1991; Heppner, Multon & Johnson, 1994 (Yang & Gysbers, 2007).

Overall, results suggested that lower levels of career search self-efficacy were related to higher levels of psychological distress among the students. In general, those individuals who reported low self-efficacy and higher distress also reported feeling a lack a career readiness, a lack of self-confidence, and lower levels of support related to career development when making the transition between college and their intended career (Yang & Gysbers, 2007).

Though an extensive amount of research has been conducted to understand the process of college students’ career readiness and the student-to-career identity transition, most research efforts are only representative of the general collegiate population. One subgroup of young adults worthy of specialized attention as they prepare for their post-collegiate careers is student athletes, a group that has not been largely studied to date in these areas. This particular nontraditional group might be especially at risk for a decrease in career decision-making, maturity, and readiness (Feldman, 2003).

College student athletes experience similar identity developmental milestones as the general college student population. In other words, college student athletes tend to
experience many of the same developmental processes (emotional, social, and academic exploration) as college students regarding academic and career goals upon entering college (Miller & Kerr, 2003). Student athletes would be expected to progress through the identity formation vectors as discussed in Chickering’s Identity Developmental model (Chickering, 1969; Chickering & Reisser, 1993). This psychosocial theory of student development is derived from one of Erik Erikson’s Psychosocial Stages of Development, identity vs. role confusion (Evans, Forney, Guido, Pattons & Renn, 2010; Valentine & Taub, 1999).

As explained through Erikson’s developmental model, throughout the stage of identity vs. role confusion, adolescents and young adults are forming their vocational identity (Erikson, 1968). Vocational identity refers to the integration and crystallization of an individual’s energy, aptitudes, and opportunities into a consistent sense of the uniqueness of her/himself and fit into the vocational world (Holland, 1997). An adolescent’s vocational identity is related to the concept of ego identity (Erikson, 1968) and is achieved through the same cognitive processes as ego identity (i.e., exploration, observation, reflection commitment). This explanation is indicative of the leading role that vocational development plays in adolescent identity formation. Chickering (1969) then expanded on Erikson’s psychosocial theory, specifically focusing on the identity vs. role confusion stage as it relates to career development. Chickering’s Identity Developmental Model (Chickering, 1962) is explained below, as it is an integral part of the theoretical framework that will be used for this research study.

To gain a better understanding of identity development, it is important to describe
how Chickering chose seven “vectors” as opposed to “stages” to symbolize the college student developmental process. As previously mentioned, Chickering (1969) identified vectors as a non-linear process of development. These seven vectors include developing competence, managing emotions, moving from autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity (Chickering & Reisser, 1993). Movement through all of these vectors would be expected for any college student and any subpopulation of college students, such as college student athletes. As a college student experiences certain vectors (e.g., establishing identity), he or she will attempt to figure out who he or she is as an individual as it relates to his or her career (Evans, Forney, Guido, Pattons, & Renn, 2010). Within each of the theoretical vectors and/or stages that are used to conceptualize the student developmental process, individuals will utilize multiple experiences and interactions that naturally occur in college as a way of fleshing out the various facets of their life. Throughout college, the various vectors will serve to infuse and progress the identity development process, including developing purpose, freeing interpersonal relationships, and managing emotions (Chickering & Reisser, 1993).

**Athletic Identity**

Although there are numerous commonalities within the identity development processes for college students and student athletes, there are also identity elements that athletes experience which are unique to that population. Brewer, Van Raalte, and Linder (1993) define Athletic identity as “the degree to which an individual identifies with the athletic role” (p. 237). Athletic role is determined by how a student perceives and feels
about his or her goals, values, thoughts, and sensations related to the sport in which he or she participates (Horton & Mack, 2000). Individuals who strongly identify as athletes (as compared, for example, to most CSNA) tend to have traits including more physically fit appearance, higher levels of self-confidence, mental toughness, self-discipline, and a strong sense of belonging to a group at a collegiately competitive level (Lumpkin & Stokowski, 2011). The development of the aforementioned traits of toughness, self-discipline, being fit, being confident, and collegiality is what sets the stage for a student athlete’s eventual identity development. Indeed, these traits tend to be something that almost all college student athletes have in common (Horton & Mack, 2000). This is not to say that college students cannot have similar traits that are associated with the athletic identity; however, the athletic identity traits held by college student athletes often contribute to their social, emotional, and career identity development throughout college (Lumpkin & Stokowski, 2011).

Many college athletes tend to identify more strongly as athletes than as students, as they are skilled and committed enough to participate at the collegiate level, and are not novice athletes (Coakley, 2009). They have practiced, played, and succeeded as members of a team or individual sport for many years prior to college. The lifelong routine and natural inclusion of athletics, and the recognition athletes receive from family, friends, and community members for their athletic accomplishments, serve as positive reinforcements and promote their continuation of commitment to athletics and their identification as an athlete (Beamon, 2012).

There are several positive qualities and characteristics often demonstrated by
athletes. For instance, athletes are generally committed to a rigorous schedule, involved with their team on and off the field, and make sacrifices to other components of their life for their sport (Beamon, 2012). The ability to follow directions and execute coaches’ directives is seen by athletes and coaches as being disciplined. Other athletes on their teams tend to have similar interests and passions; therefore, communicating and socializing with one another may seem natural (Beamon, 2012). This natural yet automatic placement into social and peer groups and fixed behavior plans may influence an individual’s vocational development, which includes career and identity development.

Various researchers have examined athletic identity and athletic identity foreclosure among college athletes. Athletic identity foreclosure is defined as an individual’s commitment to an identity prior to exploring other options related to career, talent, or social groups (Danish, Petitpas, & Hale, 1993). Settles, Sellers, and Dramas (2002) asked college student athletes if they viewed their student identity and athletic identity as separate or overlapping, as well as if the students felt their student and athletic identities influenced each other. A sample of 200 intercollegiate athletes participating in Division I, II, and III sports was surveyed as part of their study. The researchers concluded that student identity and athletic identity were seen as separate but overlapping (Settles et al., 2002). Interestingly, there was a difference in the amount of athletic identity vs. student identity that was related to the amount of time athletes participated in their sports collegiately. On average, college student athletes in the study reported spending approximately 30 hours per week participating in their sport (Settles et al., 2002). The findings of the study suggested that as a population, college athletes
identified more strongly as “athletes” than as “students,” based on their hours per week spent on athletic participation (Settles et al., 2002).

Beamon (2012) investigated athletic identity foreclosure among 20 African American former Division I student athletes. The majority of participants were in their late 20s, with two older participants in their late 40s. Through the process of in-depth ethnographic interviews, these former athletes were asked to explore their process of self-identity development, athletic identity foreclosure, and how their athletic identity played out in their lives post-college (Beamon, 2012). Beamon (2012) found that 15 of the respondents felt that athletics still made up 60% or more of their self-identification at the time of the interviews (i.e., post college). Further, 12 of the respondents believed that sports constituted over 75% of their self-identification and perceived that members of the community, family, and friends similarly viewed them as athletes at the time of the interviews. Fully 90% of the men shared that athletic identity development began at a very young age, which led to identity foreclosure because they were not exposed to or not willing to explore other roles before committing to athletic identity (Beamon, 2012). As one man who was interviewed stated, “I’d say about 90% of who I am comes from my life in sports, but at this point 20% of my life is sports… Sports has been a part of my life, just as much as my parents have been a part of my life. I don’t know who I would be without it” (Beamon, 2012, p. 204).

Additional work in this area by Miller and Kerr (2003) examined the identity formation of college student athletes throughout their college careers. Participants included four male and four female senior-year student athletes, two from team sports
and six from individual sports programs (Miller & Kerr 2003). On the basis of their qualitative investigation, the authors concluded that participants had a mixture of three identity roles: athletic identity, student identity, and social group identity. A two-stage form of identity development transpired. The first stage, Over-Identification with the Athletic Role, happened in the early and mid-periods of the students’ college careers. The early period was considered the first year at the university and first half of second year; the mid-period was the latter half of second year through the end of the third year. Throughout the Over-Identification stage, student athletes in the study reported focusing their immediate goals and future career interests based on athletic performance and accomplishments (Miller & Kerr 2003). The athletes also reported spending a significant amount of time on developing their athletic skills and making plans to continue their athleticism into a potential career beyond college. The second stage, Deferred Role Experimentation, encompassed the final temporal phase of the athletes’ university lives (Miller & Kerr, 2003). During this stage, athletes began to recognize that having a future as an athlete beyond college may not be as realistic; as such, athletes explored other potential career opportunities (Miller & Kerr, 2003). This research study recognizes the overwhelming influence of athletic identity on a sample of former Division I athletes and their self-disclosure of how much athletics contributed to their overall identity and career influence.

The overall relationship among the three forms of identity was competitive, and there was an ongoing negotiation among the three (athletic, student, and social; Miller & Kerr, 2003). Investment of role-identity in one form often meant limited exploration of
role identities in the other two. For example, if an athlete focuses the majority of his/her time and energy on physically and mentally preparing for athletic performance/competitions and spending down time socializing with the team, other areas of the athlete’s life may be sacrificed. The areas that were sacrificed included academics, career exploration, and socializing with other peers who were not student athletes. Overall, athletes who reported athletic identity as their most dominant identity had high hopes and confidence of being successful within their college athletic career, but did little to develop any other form of career identity (Miller & Kerr, 2003).

According to the National Collegiate Athletic Association (NCAA), over 400,000 student athletes participate in Division I, II, and III sports (ncaastudent.org, 2013). Only a small percentage of these students have the ability and opportunity to earn positions in professional sports leagues. Consequently, college athletes have an extremely small likelihood of playing sports as their profession. For instance, the National Football League (NFL, 2015) Players Association reported only 1.7% of respective college athletes are drafted each year, while the Women’s National Basketball Association (WNBA, 2015) noted that college athletes have a 1% chance of being drafted. Major League Baseball (MLB, 2015) reported the highest percentage of draft picks (9.4%). However, the majority of this group will never play beyond the Minor Leagues, where salaries are very low. With these small percentages and the slim likelihood of college athletes continuing their athletic careers professionally through other means (e.g., coaching), the promotion of effective career development among this population is a very important key to post-graduation success.
Similar to college students who do not play intercollegiate sports, student athletes will spend time engaging in and exploring occupational options that resonate with their self-identity (i.e., how one views oneself; see Gottfredson, 2002). As student athletes are introduced to new occupational ideas or potential career options, they will add or eliminate the new information as a potential future career path. Through various experiences, such as academic coursework, social engagements, and occupational exposure (e.g., internships), individuals are able to begin deciphering which career opportunities are most congruent with their self-identity (Gottfredson, 2002).

The self-identity of a student athlete may encourage career exploration and development in particular areas. Advancing past the areas of career exploration, a student athlete may consider a particular career and declare a major based on his or her level of confidence within this field of interest. The career development process and consideration of a career decision may be different than that for non-athlete college students.

**Career Decision-Making Self-Efficacy**

One way to explore the career development of college students and college student athletes is to examine their career decision-making self-efficacy (CDSME). Self-efficacy is defined as one’s belief in his/her ability to perform a certain behavior (Bandura, 1977). There is a wide body of literature examining self-efficacy in many aspects of life, including academic development, lifestyle development, social and emotional development, and career development (Andrews, Bullock-Yowell, Dahlen, & Nicholson, 2013; Burns, Jasinski, Dunn, & Fletcher, 2012; Zhao, et al., 2013).
Self-efficacy stems from the general social cognitive theory of Bandura (1977; 1986; 1997). According to Bandura (1995), self-efficacy can influence an individual’s decisions, emotions, levels of effort, and persistence over obstacles, and consequently, the individual’s performance. These beliefs also play a crucial role in a person’s life, since they predict career interests, career goals, and career choices (Lent, Brown, & Hackett, 1994; 2002). This is particularly important for college student athletes and their understanding of self-efficacy with regard to career decision, emotions, and levels of effort toward being an athlete and a student, and how level of confidence with both may influence career goals, decisions, and interests.

Bandura (1977) suggested that judgment about one’s self-efficacy is based on four informational sources: mastery experiences, vicarious experiences, social persuasion, and physiological responses. Cognitively evaluating these factors leads to personal confidence, or lack thereof, in an individual’s ability to perform a certain behavior. Furthermore, a successful attempt can reinforce positive self-efficacy beliefs (Bandura, 1995). Mastery experiences are the most influential source of self-efficacy, as they are one’s own authentic previous experiences (Feltz, Short, & Sullivan, 2008). In other words, gaining mastery over a given task or behavior is the very definition of self-efficacy, as it is the highest expression of one’s ability to complete a task or behavior (Bandura, 1977; 1995).

Individuals with successful mastery experiences will have higher self-efficacy levels, whereas unsuccessful mastery experiences will decrease self-efficacy levels. These mastery experiences are determined to be successful or unsuccessful based on the
effort exerted and perceived task difficulty (Feltz et al., 2008). Vicarious experiences or observing others perform a similar task, have the second-highest level of impact on self-efficacy levels and allow an individual to compare their own capabilities with those of others (Feltz et al., 2008). When an individual has limited knowledge of his or her own capabilities, that individual will rely more heavily on a model to make the comparison as to whether the challenge is surmountable (Bandura, 1997). Social persuasion, which includes feedback and positive reinforcement, can increase self-efficacy levels; however, negative reinforcement can decrease self-efficacy levels (Feltz et al., 2008). Finally, decreasing negative physiological responses, which include anxiety, fatigue, stress, pain, feelings, and emotions, can help increase self-efficacy levels, as the individual will not feel the physical burdens of being incapable (Feltz et al., 2008).

Self-efficacy has been studied within the context of career development to determine individuals’ confidence in their career choice. For instance, research pertaining to adults who are interested in changing careers or undergraduate students preparing for careers post-college has consistently demonstrated that there is a direct correlation between level of general self-efficacy and career development as measured by the Career Decision Making Self Efficacy Scale (Andrews, Bullock-Yowell, Dahlen, & Nicholson, 2013; Burns, Jasinski, Dunn, & Fletcher, 2012). As part of this literature on the intersection of self-efficacy and career, the term “Career Decision Making Self-Efficacy” (CDMSE) was established and defined (Taylor & Betz, 1983). This term refers to the belief that one can successfully complete a task or tasks necessary to make a career decision (Taylor & Betz, 1983). Robbins, Lauver, Davis, Langley, and Carlstrom (2004)
also defined CDMSE as an individual’s belief in his/her ability to make an educated decision about his/her career path to pursue a meaningful career. Colleges present students with various academic experiences to explore (e.g., courses; seminars) led by professors, extracurricular organizations to join, and career service programs implemented to increase their career decision-making skills and self-efficacy (McAtee, 2012). Students spend the academically focused portion of their time exploring academic courses and discovering potential career opportunities (Wright, Perrone-McGovern, Boo, & White, 2012). This exploration process is paramount to career decision-making, as well as supporting the college to career transition (Yang & Gysbers, 2007).

There has been a significant amount of research conducted to gain an understanding of college students’ career exploration, as well as their transition from college student to career professional. In 1995, a study was conducted by Solberg, Good, Fischer, Brown, and Nord (1995) to determine college students’ levels of self-efficacy throughout the career search process. The authors sampled 427 students (168 students completed their first year of college, 54 completed their second year, 58 completed their third, and 111 completed their fourth year) and asked them to engage in a variety of career search activities (Solberg et al., 1995). These activities included completing career search inventories, internships, and work-related experiences (Solberg et al., 1995). Not surprisingly, the researchers concluded that engaging in the career search process positively increased college students’ awareness and preparedness for post-collegiate careers (Solberg et al., 1995).

More recently, researchers have found that when the career search process is not
conducted, students experience psychological distress (Cote, Saks, & Zikic, 2006). In
addition, when college students have high levels of career exploration activity and
CDMSE, they consistently display positive career search behaviors and outcomes (Yang
& Gysbers, 2007). Further, psychological distress was related to lower levels of career
search activities and CDMSE. Some of the psychological symptoms studied included
depression, stress, and anxiety (Yang & Gysbers, 2007).

A follow-up study was performed to gain an understanding of individuals’
perceptions of career transitions in relation to their specific type of career search self-
efficacy and individual level of psychological distress (Yang & Gysbers, 2007). The
psychological resources studied included career readiness, career confidence, career
control, career support, and career decision independence. One hundred and ninety-one
college seniors from a large Midwestern university completed the Career Search Efficacy
Scale (CSES; Solberg, et al., 1994), the Brief Symptom Inventory (BSI; Derogatis &
Melisaratos, 1983), and the Career Transition Inventory (CTI; Heppner, 1991; Heppner,
Multon & Johnson, 1994). Overall, results supported the aforementioned research
findings on self-efficacy (e.g., increased career search processes determined a more
positive transition from college to career) and revealed that as student career search self-
efficacy decreased, psychological distress increased. Those individuals who reported low
self-efficacy and increased distress also reported feeling a lack of career readiness, self-
confidence, and support to make the transition from college to their intended career
(Yang & Gysbers, 2007). College athletes are a population at risk for these negative
outcomes, given their typically lower involvement in traditional activities leading
towards CDMSE. When researched, college athletes had inconsistent levels of CDMSE when compared to CSNA (Brown & Hartley, 1998; Quimby & O’Brien, 2004). Career development among college athletes appears to be stunted during their undergraduate years, as these students are more likely to face problems including poor adjustment to college and a lack of confidence in career decision-making (Watson & Kissinger, 2007). In addition, researchers have found that student athletes tend to avoid career decision-making tasks, such as choosing a major, learning about their own skills and interest, and seeking out relevant career information (Taylor & Beltz, 1983; Quimby & O’Brien, 2004). Therefore, the lower levels of CDMSE and unwavering confidence in their athletic abilities and professional prospects may be due to factors and characteristics that set college athletes apart from college students and the career development process (Watson & Kissinger, 2007).

One potential influence contributing to lower levels of CDMSE in college athletes is their balancing of student and athletic identities. Although there have been some mixed results, there has been supporting research suggesting athletic identity has an influence on CDMSE (Stankovich, Meeker, & Henderson, 2001). Researchers found a significant relationship among both athletic and student identity when student athletes were asked to participate in the Positive Transitions Model of Sport Retirement Program. This program was created to support student-athletes and bolster their confidence in utilizing their athletic skills post-graduation. The authors found that students with lower levels of athletic identity had higher levels of CDMSE, and student athletes with higher levels of athletic identity had lower levels of CDMSE (Stankovich et al., 2001).
Conversely, Fogarty and McGregor-Bayne (2008) conducted research examining factors that influence career decision-making among college student athletes in Australia. In Australia, the term to describe college student athletes is elite athletes. Elite athletes were all affiliated college students within the Western Australian Institute of Sport (WAIS) in Perth and the Queensland Academy of Sport in Brisbane. Examiners gathered research data from 117 elite Australian athletes (51 males and 66 females) with an average age of 21 (Fogarty & McGregor-Bayne, 2008). These participants completed adapted versions of the Career Decision-Making Difficulties Questionnaire (Albion & Fogarty, 2002), the Athletic Identity Measurement Scale (Brewer et al., 1993), the Career Decision-Making Self-Efficacy Short Form (Betz, 2001), and the Work Locus of Control Scale (Spector, 1988). The authors concluded that these elite athletes did not differ from the general population in their career indecision levels. However, it is important to note the researchers indicated that all of these athletes were participants of the Athlete Career Education Programs, and the authors believed the programs were certainly at least part of the reason for the lower career indecision among the sample compared with athletes not participating in a career program (Fogarty & McGregor-Bayne, 2008). In addition, athletes with strong senses of athletic identity spent more time with their sport, were predominantly male, and struggled more with career development. The younger elite athletes presented with the lowest levels of CDMSE, while the more senior athletes who were involved in the career development program did not show struggles or deficiencies with career decision-making self-efficacy (Forgarty & McGregor-Bayne, 2008).

Other variables such as gender have been examined with regard to CDMSE.
Findings from a project, Fogarty and McGregor-Bayne (2008) found that female athletes scored lower than males on CDMSE. In addition, other researchers found that in general, male athletes are at more of a risk for lower levels of CDMSE and college to career transition when compared to their female counterparts (Brewer, Van Raalte, & Linder, 1993). Still other researchers have suggested that female athletes have higher levels of career decision-making self-efficacy in some career fields (e.g., health care), and male athletes have higher levels in other fields such as science and technology (Fogarty & McGregor-Bayne, 2008). Although these results are somewhat varied, they nevertheless underscore how gender will impact CDMSE.

The aforementioned research focused on discovering ways students and student athletes explore and practice various career and job experiences as well as the process by which these students learn and prepare to make a career decision. There are various ways that student athletes are exposed to potential careers and are influenced to follow a particular career path. What has yet to be determined is how athletic identity is related to a career decision and the behavioral practices that go into the career decision process among both college students and student athletes. The current study examined the levels of CDMSE in athletes vs. CSNA.

**Professional Development Engagement**

The aforementioned literature suggests that researchers have generally found an inverse relationship between athletic identity and CDMSE among college athletes (i.e., Stankovich, Meeker, & Henderson, 2001) or no relationship between athletic identity and CDMSE (Fogarty & McGregor-Bayne, 2008). Another factor, Professional Development
Engagement (PDE), has not been examined for its potential relationship to CDMSE among college student athletes. Although a relatively new construct of study in the literature, PDE has been recognized as a crucial piece of the career development process of college students (Reason, 2009). Blau and Snell (2012) define PDE as “the level of undergraduate engagement in professional development” (p. 689). PDE consists of the external components of student engagement to prepare for a successful college to work transition (e.g., mock “live” interviews, résumé development, internships, externships, etiquette workshops; see Wendlandt & Rochlen, 2008; Wessel, Christina, & Hoff, 2003). Carini, Kuh, and Klein (2006) defined student engagement as “the effort and energy students devote to educationally purposeful engagement in activities such as learning, graduating, and acquiring knowledge to succeed in one’s envisioned career” (p. 2). Student engagement is somewhat different from, but still related to, PDE, as it is seen more as the internal components that assist college students with academic and career growth. Examples of these activities would include experiences that help develop oral and written skills, learning how to conduct research individually or with a group of students, developing study skills, and interaction with peers and faculty (Astin, 1984; Reason, 2009).

Academic interest, career exploration, and student engagement initially help undergraduates choose a major, thereby fostering a connection between academic and post-college career options (Connor, Daugherty, & Gilmore, 2013). College students going through the career development process typically engage in reflection and complete self-assessments of personality, aptitude, and vocational interest should they
choose to utilize their university’s Career Services office (Chung, 2002). Additionally, colleges offer a variety of academic courses and curricula in most fields of study. Each academic department has professors who are experts in their designated fields. These individuals teach courses and often are both able and willing to offer guidance to students regarding curriculum and career planning. Students usually have the option to take courses from multiple academic departments and learn from expert professionals within the various fields (Wright, Perrone-McGovern, Boo, & White, 2012).

Colleges typically offer courses from the early morning hours until later in the evening, thereby allowing the flexibility for students to tailor their schedule to their needs. In addition to attending courses, college students may also join clubs or extracurricular activities pertaining to their interests. For instance, a freshman student with an undecided major who takes an interest in psychology may join a psychology organization. Through this experience, the student may learn more about the field of psychology and meet other students with similar interests and perhaps eventually move into a leadership position within the club. Such a step can enhance career development and potentially help promote CDMSE in general. If the student in question also participates in athletics, taking various courses to explore new majors and join different on-campus organizations may be more difficult to accomplish. This is because the structured game and practice schedule of the athlete may limit the time availability to pursue PDE. As such, researchers suggested that college athletes may have a tendency to feel less obliged to step outside of their normal social circle and meet individuals with potentially different career interests (Morrow & Ackermann, 2012; Rayman, 1993).
Another opportunity that is available to students on many college campuses is the ability to work one-on-one or in a small group setting with a professor and other students to conduct research pertaining to the professor’s and students’ interests. This opportunity to learn and work with an expert within the field helps expand the student’s knowledge, research abilities, and writing skills, and may again open up new career interests and potential pathways (Elrath, Hawk, & LeClair, 2010). Such research also could lead to co-authoring papers, co-authoring publications, and/or collaborative presentations in local and/or national forums within the field of study. This type of exposure to PDE could provide the student with networking opportunities with other professionals who have similar interests or expertise, thereby opening doors to internships, jobs, or continuing education opportunities (Elrath et al., 2010).

In addition to student engagement opportunities and due to the increase in job placement challenges in the United States today, several authors (e.g., Foubert & Grainger, 2006; Kavoussi, 2012; Lipka, 2008; Morrow & Ackerman, 2012) have suggested that colleges and universities should increase their externally focused forms of PDE. PDE consists of college students participating in learning opportunities outside of the classroom, such as internships, externships, cooperative job programs, guest speakers for professional organizations, campus recruiting/employer networking events, impression management workshops, business dress and dining etiquette, and paid/unpaid shadowing opportunities (Elrath et al., 2010; Lipka, 2008). Such activities have been suggested to play an important role in undergraduate student development (Foubert & Grainger, 2006; Morrow & Ackermann, 2012; Rayman, 1993). Additionally, more
formal university programs have been focusing on undergraduate development through services such as Career/Professional Development Centers, or CPDC (Abel, Deitz, & Su, 2014).

Instead of focusing on major or occupational choice, PDE opportunities involve the student in activities to enhance career development and post-graduation employment (Blau & Snell, 2012). Additionally, researchers suggest that involvement in PDE enhances the likelihood of a college student graduating in a timely manner and obtaining a career related to their major upon graduation (Blustein, Medvide, & Wan, 2012). Other forms of PDE include participation in mock “live” hiring interviews and résumé development, as well as offering opportunities for students to participate and attend career fairs or campus recruiting events where professionals seek out students for job opportunities. The purpose of offering PDE is to enhance students’ professionalism and professional socialization; therefore, programs to support students in learning proper etiquette and dress/attire are often included as part of this professional training (Shivpuri & Kim, 2004).

There are various challenges that student athletes may face when considering and pursuing professional development engagement. For instance, many professional development opportunities do not have flexible time commitments (Blustein, Medvide, & Wan, 2012). Therefore, experiences such as internships, externships, and studying abroad, all of which require a significant time commitment, may conflict with pre-existing commitments that athletes must respect. Due to these parameters, this may discourage student athletes from pursuing any majors that require forms of off-campus
work-related hours for graduation. Furthermore, many student athletes tend to find comfort in the familiarity of their social and peer groups for reasons such as everyone living similar lifestyles, having common goals, and identifying as athletes on some level (Evans, Forney, Guido, Pattons, & Renn, 2010). This comfort may discourage student athletes from seeking out career or PDE opportunities with students who are not athletes. Additionally, many athletes often look to their senior players and coaches as role models and mentors (Blustein, Medvide, & Wan, 2012). Coaches and other players’ career suggestions may influence a student athlete’s professional development engagement.

Regardless of the source of PDE, the literature shows how PDE is useful to the college student. The National Association of Colleges and Employers (NACE) surveyed 640 randomly-selected college recruiters and found that the top four performance dimensions sought in college graduates by prospective employers include interpersonal skills, ethics and integrity, leadership, and perseverance (Shivpuri & Kim, 2004). Survey results in the Chronicle of Higher Education (Fischer, 2013) reported that many employers felt that new college graduates were lacking in basic workplace proficiencies such as adaptability and communication skills (Siller, Rosales, Haines, & Benally, 2009). Additionally, researchers have indicated there is a significant positive association between individual PDE-related items (e.g., internships, participation in student professional organizations, work experience) and college graduate employment success (Sagem, Dallam, & Laverty, 2000). Gulat, Redington, and Schalger (2000) also found that newer alumni (graduated within the five years prior to the study) with at least one internship experience had a significantly higher starting salary and found their first full-
time job in less time than comparable alumni without an internship.

Increased exposure to PDE undoubtedly supports a college student’s career development processes (Blau & Snell, 2012). Also, PDE may support implementation of programs to provide a smoother transition from college to career for students, especially when one considers that the practice and success of PDE for college students is important to the reputation of the university (Bowers, Dickman, & Fuqua, 2001). Thus, the more prepared a college student is for their post-secondary plans by PDE, the greater the probability of their success. This directly associates to the experiences facilitated through the college/university.

The research involving PDE is minimal and limited with regard to results involving college students and their career development. Prior to this research, there had been no specific research examining the potential impact of PDE on college student athletes’ career development, or potential factors (such as athletic identity) that might influence athletes’ likelihood of participating in PDE. Research studying the level of PDE practiced by college student athletes as well as determining if PDE influences the career development process offers substantial insight to improving the career development process for college students and college student athletes. There is currently no research that looks at the relationship between PDE and CDMSE among college students while controlling for athletic identity. Additionally, there has been no determination if this relationship differs when comparing college students to college student athletes.
Theoretical Framework

The theoretical framework that guided this research study, Chickering’s (1963) identity development theory, provides a psychosocial developmental lens for examining students and identity development throughout the college years. Results from this study may demonstrate the importance of a college student’s and college student athlete’s identity and how it may impact the career development process, as well as the social, cognitive, and behavioral components that play a part in vocational exploration and career decision making process. As such, Chickering’s model was used as the explanatory framework for the research questions utilized by this project.

Psychosocial Theories

A discussion regarding other psychosocial developmental theorists (e.g., Bronfenbrenner, 1979; 1989; Erikson, 1959; 1963; 1968; Lerner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) who have conducted extensive work and research around identity development is relevant, as the depth of previous work on identity development as it relates to college students and identity provides support for the utilization of Chickering’s model in the current research study. That said, the idea of psychosocial development, particularly as it is related to college students, may be explained through the works of Erik Erikson (1959; 1963; 1968) and Arthur Chickering (1969; 1993). The Identity Developmental Model (Chickering, 1969; 1993) is an expansion of one of Erik Erickson’s stages of psychosocial development (Identity vs. Role Confusion) as it relates to college student aged-individuals (Erickson, 1959; 1963; 1968).
The current research project utilized Arthur Chickering’s Developmental Model as the overarching example of psychosocial development related to college students and college student athletes as a way to gain an understanding of college students and career development. By building and expanding upon Erik Erikson’s psychosocial theory, Chickering’s (1969) model focused primarily on the psychosocial development of college students and the environmental influences present on the modern university campus, (i.e. social, academic and emotional experiences), both of which have the potential of impacting identity development. As Chickering and Reisser (1993) noted, Chickering’s Developmental Model followed in Erikson’s footsteps by proposing that establishing identity depended in part on movement along the first three vectors [in 1969 they were Developing Competence, Managing Emotions, and Developing Autonomy], since one had to clarify who one was, apart from others, before interpersonal relationship could be freed from symbiosis. (p.23)

**Erik Erikson.** Erikson (1959) recognized that the term ‘identity’ is a mutual relation in that it connotes both a persistent sameness within oneself (self-sameness) and a persistent sharing of some kind of essential character with others. Erikson’s views, definitions, and concepts of identity have influenced college student developmental theory, especially with respect to the concept of stage development or “crises” which all humans face during their psychosocial development. The eight crises are identified briefly below, and the crisis of identity vs. role confusion is examined with more detail in its own section later in this manuscript. Emphasis is given to the crisis of identity vs. role
confusion, as this particular crisis contributes to the understanding of the central research questions that are studied in this research project. Additionally, the life stage of participants in this study aligns adequately corresponding to the model.

Crisis 1: Basic Trust vs. Mistrust (0-18 months);
Crisis 2: Autonomy vs. Shame and Doubt (18 months to three years);
Crisis 3: Initiative vs. Guilt (three to six years);
Crisis 4: Industry vs. Inferiority (six years until puberty);
Crisis 5: Identity vs. Role Confusion (teen years);
Crisis 6: Intimacy vs. Isolation (18-34 years);
Crisis 7: Generativity vs. Stagnation (35-60 years);
Crisis 8: Ego Integrity vs. Despair (60 plus years).

Widick et al. (1978) described a stage or crisis as “a particular time in the life sequence when physical growth, cognitive maturation, and certain social demands converge to create a particular developmental task” (p. 3). Pascarella and Terenzini (1991) noted that a crisis is not an emergency per se, but rather a time for decision or choice, and that all choices go on to influence future development.

Two studies of note have attempted to clarify Erikson’s developmental crises. Constantinople’s (1969) study of college students raised several questions contrary to Erikson’s writing, in so far as his work specifically questioned the social environment as a factor in an individual’s identity development. When using Constantinople’s own instrument, the Inventory of Psychosocial Development (IPD), Whitbourne, Zuschlag, Elliot, and Waterman (1993) conducted a 22-year sequential study and found supporting
data of Erikson’s stages or crises, especially with respect to identity vs. role confusion. It should be noted that the study specifically used college student alumni ranging in age between 20-42 years.

**Identity versus role confusion.** The psychosocial stage, identity vs. role confusion (Erikson, 1959) was the focused psychosocial stage Chickering utilized as a foundation for his identity developmental model as it relates to higher education and career development. Erikson (1959) indicated that individuals acquire identity through those who have raised them, as well as through those who have educated them. Much of an individual’s identity, it could be argued, is not theirs by choice, but rather is determined by place, time, and societal requirements (such as those of school). This idea relates to an understanding that college students have multiple variables and factors that contribute to their career development including but not limited to their social surrounding, upbringing, and individual’s college students deem as “educators,” (e.g. parents, advisors, and professors).

Additionally, Erikson (1963) viewed the identity versus role confusion stage or crisis as one of turmoil and integration as the individual explores his or her own way. The turmoil faced by the individual includes not only the physical changes evident during puberty, but also involves several psychosocially related issues. These include how the individual feels he or she appears in the eyes of others, roles available to the individual, and potential occupational opportunities (Erikson, 1959).

Some college students (18-21 years old) may experience the identity versus role confusion crisis during their college years, as college is a time for exploration and
reflective thoughts about the future. The identity confusion crisis is a time of questioning where the individual is attempting to meld personal aspirations and ideas with the demands of those within the immediate environment (Pascarella & Terenzini, 1991).

The individual who is moving through the crisis period associated with identity formation, as well as the delay in development noted as the psychosocial moratorium, often faces questions and opportunities, many posed by the person her/himself, as they make progress through life. As Erikson (1968) noted, “the term identity refers more often than not, to something demonstrative, to a more or less desperate ‘quest,’ or to an almost deliberately confused ‘search’” (p. 19). This search, or self-conscious exploration, involves the resolution of past identification restrictions with what the individual is about to become (Erikson, 1959). For college-aged students, their past experiences (i.e. upbringing and social environment) in conjunction with the college experience (i.e. social environment and engagement) contribute to identity formation.

**Adolescent to emerging adult to adult.** Arnett (2002) provides an additional explanation of college students’ developmental processes, and he termed this period ‘emerging adulthood.’ This stage falls between the ages of 18-25 and is directly between the adolescent and adult stages of development. This age range is also considered to be “traditional college age,” as it is the most common timeframe of being a full-time college student, if one pursues higher education. Arnett’s ideas concerning emerging adulthood put forward a perspective on adolescence through young adulthood and the stages through the career developmental process. Arnett (2002) considered this stage to be seen as “conceptually, theoretically, and empirically” (p. 463) different from adolescence and
adulthood. Typically, a group of individuals in this stage are university students who are highly mobile, unmarried, and are involved in various forms of social networking (Bigham, 2012). Arnett (2007) also recognized that emerging adults are trying out new experiences and gradually making decisions that will impact them in adulthood.

Most young adults, such as college students within this stage of development, are spending their early twenties exploring and learning about their life and making great changes that will be of importance to their future (i.e., career decision making; Arnett, 2002). This time is known as the transition period from adolescence to adulthood, and is also a time period that individuals later reflect upon as older adults when they think about important events in their lives (Martin & Smyer, 1990). Given this line of reasoning, it is worth noting that there are several distinctions between adolescence and adulthood, and emerging adulthood is said to be theoretically and empirically different from both (Arnett, 1998). This is because adolescents have left the dependency of caretakers, but have not quite found complete independence financially, emotionally, and/or socially (Rindfuss, 1991). During emerging adulthood, various paths pertaining to identity, career, social, and living situations may be questioned and explored. This period is also considered to encompass the most volatile years of life (Arnett, 2007), as individuals in this period no longer consider themselves completely dependent adolescents, but also are not confident enough to consider themselves independent and stable adults.

G. Stanley Hall (1904), widely known for his adolescence study nearly a century ago, argued that the adolescent years occur from age 14 to age 24. Throughout the subsequent years, other researchers have considered the adolescent years to begin at age
of 10 or 11 and end by the age of 18 or 19. Regardless of the exact age range, it is recognized that the adolescent years are the second decade of life (Bigham, 2012). The major criteria for the definition of adolescence are often based on biological and social evolution.

Emerging adulthood differs from adolescence in that it is considered a transition period with little that is normative. Emerging adults enter adulthood at different points, as some individuals spend more time in the exploratory stage until they are 29, and some individuals may move into adulthood by the age of 19 (Bigham, 2012). Researchers also suggested that emerging adulthood may exceed the age limits past 25 into the young 30s, or that an individual within this stage may have a shorter time span lasting for only a few years within this stage of post-secondary education (Bigham, 2012; Douglass, 2007).

Emerging adults are often college students. As such, members of this group are not yet settled into long-term choices such as career and life paths that are expected in adulthood. Emerging adults are financially less stable and are often living in more tumultuous and unstable living situations (Blinn-Pike, Worthy, Jonkman, & Smith, 2008). When taken together, the evidence aforementioned within my paper suggests that emerging adulthood is a distinct period of life course development for young adults, as this heterogeneous group is considered to be engaging in the stage of development recognized for change, exploration, inquisition, volatility, and identity development (Arnett, 2002).

**Chickering’s developmental model.** In his 1969 work entitled *Education and Identity*, Arthur Chickering established an understanding of the concept of “identity
development,” and the impact of his work upon college student development in the United States was profound and far-reaching. In 1993, Chickering and Reisser offered a second edition of the book in order to acknowledge new research, address the greater variety of college students’ experiences in the late twentieth century, and to make several changes in the original theory.

The revised edition is primarily aimed at college student development and university-level faculty and provides an expansion to Erik Erikson’s theories of identity development. Chickering and Reisser (1993) wrote that “developing identity is like assembling a jigsaw puzzle, remodeling a house or seeking one’s ‘human rhythms,’ a term that Murphy (1958) illustrated by photic deriving” (p. 48). The authors elaborated, stating that, “development of identity is the process of discovering with what kinds of experience, at what level of intensity and frequency, we resonate in satisfying, in safe, or in self-destructive fashion” (p. 49).

Chickering’s work focused primarily on the psychosocial development of college students and the environmental influences present on the modern university campus that have the potential to impact identity formation as it relates to career development. Chickering (1969) noted that “without a developmental philosophy at the core of the college, it can become dispensary of service, a training ground for jobs that may not exist, or a holding tank for those not sure what to do next” (p. 44). With this understanding, it is important to recognize and understand the career developmental process of college students throughout their college years, including factors that might impact career development.
In order to fully understand Chickering’s theory, it is necessary to review both his original work from 1969 and the updated 1993 edition. Pascarella and Terenzini (1991), in their review of Chickering’s 1969 theory, provided some insight as to the purpose behind the formation. They noted “recognizing the absence of any systematic framework for integration or synthesizing the abundant empirical evidence on college students and based on his review of that literature, Chickering (1969) identified seven vectors of development (each with its own subcomponents)” (Pascarella & Terenzini, p. 20). Erikson’s (1968) work involving the identity stage, according to Widick, Parker, and Knefelkamp (1978), provided an “orienting point” for Chickering’s original work (p. 20). Further insight is provided by Chickering and Reisser (1993), who stated, “Chickering [1969] followed in Erikson’s footsteps by proposing that establishing identity depended in part on movement along the first three vectors, since one had to clarify who one was, apart from others, before interpersonal relationships could be freed from symbiosis” (p. 23).

Unlike Erikson, Chickering’s theory was not a stage-based model where the individual must overcome one crisis in order to move to the next. The theory is not a step-wise progression of crises, but rather a more complex system (Chickering & Reisser, 1993). Chickering’s (1969) model uses a “vector” system, whereby the individual can progress along multiple paths or, more precisely, multiple competencies simultaneously. Within his work, Chickering (1969) describes “vectors” to simply mean that the stages of development may have magnitude and direction but are not exactly in a straight line. A simple way to interpret the term “vector” would be pathways or more precisely
“highways toward individuation” (p. 35). These highways allow the individual to actively participate in the process of self-discovery and “refinement of one’s unique way of being” (p. 35). This journey is not undertaken alone, as there is influence from others. Chickering and Reisser specifically noted how “other individuals and groups, including the larger nation and global society,” are part of the process (p. 35). College students and college student-athletes have various individual and group interactions on campus that may influence their direction and development. A few examples include involvement in athletics, dorm-life, social engagement, coaches, teammates and team captains, participation in clubs and/or organizations. All of these factors may play a part in the identity development process.

Human psychosocial development, according to Chickering and Reisser (1993), does not occur on a continuum, but rather in a spiral fashion. Additionally, the individual does not necessarily progress through one vector (or competency) and move to the next immediate stage like other theories. Rather, the individual can transition through multiple vectors at varying levels of progress. Chickering and Reisser (1993) proposed “seven vectors as maps to help determine where students are and which way they are heading. Movement along any one can occur at different rates and can interact with movement along the others” (p. 34). Individuals may re-visit issues later in life and re-confront the same or similar issues from a new somewhat more developed perspective, hence the spiral effect. This is very different from Erikson’s theory where “re-visiting” would indicate some level of unfinished development or regression. Simply, identity development occurs on many different levels and at various speeds within these levels.
From time to time, opportunities present themselves that are fairly similar to past experiences, which may allow the individual to try again using the skills they have acquired during the time span. Solutions may be similar or more developed upon many factors.

Researchers have utilized Chickering’s developmental model to study college students’ academic, social, and emotional achievements throughout the years (e.g., Evans, Forney, Guido, Patton, & Renn, 2010; Toperzer, Anderson, & Barcelona, 2011). According to Chickering’s (1969) model, the first four vectors (developing competence, managing emotions, moving from autonomy toward interdependence, developing mature interpersonal relationships) are of primary concern during the first two years of college. The movement from one vector to another most often characterizes an increase in a college student’s skills, strengths, confidence, awareness, and complexity (Evans et al., 2010). Previous research tended to focus on these beginning stages of Chickering’s model and studied ways to support college students through the first four vectors (Iarussi, 2011). Chickering categorized the first vector, Developing Competence, as college-intellectual competence, physical and manual skills, and interpersonal competence (Chickering, 1962). Intellectual competence is the ability for an individual to use one’s mind to master content areas at a college-level and gain a repertoire of skills to raise sophisticated inquisitions as well as comprehend a richer way of understanding and analyzing knowledge at a college-level (Chickering, 1962).

Throughout the second vector, Managing Emotions, college students are gaining an awareness of their emotions and recognizing how to better manage them in a healthy
manner such as, exercise, proper sleep and nutrition (Chickering, 1962). For college student athletes, this vector may present a different type of challenge than it does for college students. For instance, many college athletes accept and receive influential feedback from coaches and players on a daily basis, thus forming a new set up emotions (Toperzer et al., 2011). Along these same lines, athletes are trained to control their emotions and behavior in a particular manner (Toperzer et al., 2011); this also may impact the non-linear process of managing emotions.

The third vector of college student development, *Moving through Autonomy toward Interdependence*, distinguishes when undergraduates are demonstrating self-discipline, organization, and time management of one’s schedule (Chickering, 1962). During this vector, college students have identified their personal goals and are moving through personal-emotional and instrumental independence from parents/caregivers (Chickering, 1962).

Related to the fourth vector, *Developing Mature Interpersonal Relationships*, college students gain a tolerance and understanding of differences in others (Chickering, 1962). These differences include cultural and ethnic differences, as well as ways of life and ways of thinking. Further, the development of relationships for students becomes more intimate, meaning relationships are no longer based primarily on convenience (Chickering, 1962).

Based on Chickering’s (1962) theory, the fifth vector, *Establishing Identity*, is the period of time when college students gain a comfort with themselves, including their body and appearance, their gender and sexual orientation, their cultural background, their
self-acceptance and self-esteem, and their personal balance and integrity (Chickering, 1962). According to previous researchers, this vector is seen as a turning point in the development of college students (Valentine & Taub, 1999). Throughout this stage, students typically have already investigated their forms of identity and recognized which identities, such as student identity, will help them prepare for a career after college (Chickering, 1962). By establishing an identity, college students are making career degree decisions that fit their identity and contribute to self-acceptance, personal balance, and integrity (Valentine and Taub, 1999).

*Developing Purpose*, the sixth vector, explains that college students will recognize their interests and options for the future (Chickering, 1962). A more focused plan is identified and students in this vector see their purpose with respect to career plans, personal interests, and both social and familial roles. The seventh vector, *Developing Integrity*, ties in as an expansion of vector six, and solidifies an individual’s beliefs and understanding of one’s self-interest and affirming core values. Students in this vector are developing congruence and matching personal values with socially responsible behaviors (Chickering, 1962).

Although Chickering did not propose his model as a thoroughly linear process defined by rigid age groupings, it stands to reason that students in their junior, senior, or fifth year of college (the population of interest) are most likely to be experiencing vectors five and six. The latter vectors, as well as vector seven, can be explored and re-visited by individuals in their final years of college and beyond (Chickering and Reisser, 1993).

For the current research, vector five, or Establishing Identity, was of primary
importance. Vector five was a keystone element in the system of vectors. Describing the 1969 theory, Pascarella and Terenzini (1991) indicated that, “Establishing of identity depends in part on growth along the competence, emotions, and autonomy vectors, and development on this vector fosters and facilities changes along the remaining three vectors” (p. 21). Also reviewing the 1969 edition, Widick, Parker, and Knefelkamp (1978) described the Establishing Identity vector as being “interwoven” and “difficult to distinguish” (p. 24) from the other vectors since growth and development are dependent upon competencies within other areas. In their 1993 edition, Chickering and Reisser further described this interconnectedness among the vectors and competencies with identity development by stating:

The primary element is that sense of self, the inner feeling of mastery and ownership that takes shape as the developmental tasks for competence, emotions, autonomy, and relationships are undertaken with some success, and that as it becomes firmer, provides a framework for purpose and integrity, as well as for more progress along the other vectors. (p. 181)

**Vector five: Establishing identity.** The Establishing Identity vector is more than a culmination of the previous vectors and their associated competencies. Rather, it is a stand-alone set of competencies that have an impact upon the further development of each of the vectors. The Establishing Identity vector involves seven core competencies (Chickering & Reisser, 1993):

1. Comfort with body and appearance;

2. Comfort with gender and sexual orientation;
3. Sense of self in social, historical, and cultural context;
4. Clarification of self-concept through roles and lifestyle;
5. Sense of self in response to feedback from valued others;
7. Stability and integration.

In effect, the individual is exploring and classifying who they are in terms of physical, sexual, social, and interpersonal aspects of psychosocial identity. College students are similar with respect to the establishing identity vector. That said, there are various additional physical, emotional, and social components that college student athletes experience beyond those encountered by the college student. Examples include the relatively higher risk of physical injury and the demands of remaining in peak physical condition.

Another piece of Chickering’s works of vector five that is directly related to the current research project is the impact of environmental influences in identity development. Chickering’s (1969) original work did not depend entirely upon psychosocial growth along the seven vectors. Like Erikson, Chickering saw the importance of the environment as an influence upon development. Widick et al. (1978) emphasized this when noting that “Chickering takes an interactionist view; he argues that a college environment can connect with students in certain ways which encourage development along the vectors” (p. 25). Additionally, Pascarella and Terenzini (1991) indicated that these conditions either can have a positive or negative influence on student growth and development.
Researchers also have noted the important influence of environment and specific student groups upon individual psychosocial development. Of note are Thieke (1994), Little (1997), and Martin (1998), all of whom examined Chickering’s vectors in relation to environment influences. Each of the aforementioned studies indicated that influences such as the college environment, student-faculty interactions, peer interactions, and involvement in extracurricular activities play an important role in overall development change for undergraduates. Murphy (1985) noted similar findings in a study concerning the influence of intramural sports participation on freshman student identity development.

Additionally, the influences of peer groups and student communities upon college student development have been identified by Chickering (1969) as a key component of this current research. Chickering and Reisser (1993) report that throughout their college years, students are encouraged to form social and peer groups within college communities. Specifically, Chickering and Reisser (1993) recognized the importance of how communities should include individuals with diverse backgrounds and attitudes, as well as shared interests to foster the development of cultural and career growth.

Several researchers have explored Chickering’s theory in order to assess its validity, apply it to various student groups, and offer input for updates (specifically to the original 1969 theory). Researchers have examined the complete theory, specific vectors, specific student groups (in relation to “average students”), and environmental-related issues. Research associated with vector five, Establishing Identity, and environmental influences are noted within these specific sections.

Psychosocial development research focusing on the Chickering vectors has been
conducted with several types of student groups. Johnson (1995) found no significant difference between “academically talented” and “average ability” students (p. 286), indicating academic talent on its own did not impede or enhance psychosocial development. Olthoff (1991) noted similar results (i.e., no significant difference) between freshman students exhibiting one or more learning disabilities and a control group. Scully (1981) examined alternative lifestyles of men and women within the university residence hall environment. Again, no significant difference was noted between an “average” student and homosexual/lesbian students indicating application of Chickering’s theory applies to all students.

Researchers also have examined the theory in relation to women’s development. Straub (1982) and Straub and Rogers (1986) examined Chickering’s (1969) theory and women’s development, specifically noting that tasks involving the Mature Interpersonal Relationships vector preceded Developing Autonomy. Additionally, the need to develop autonomy in regard to relationships also precedes personal autonomy. Greeley’s (1986) examination of autonomy and intimacy development issues noted similar findings, insofar as multiple patterns of development existed in regard to autonomy and intimacy, sex role self-concept, and sex-role attitudes. Taub (1995) used factors such as interpersonal relationships, parental attachment, and racial/ethnic identity to investigate traditional-age undergraduate women’s autonomy development.

Researchers have studied student employees on college campuses and their leadership and delivery of campus recreational programs with Chickering’s developmental model (Toperzer, Anderson, & Barcelona, 2011). The goal of the
Toperzer et al. (2011) study was to utilize the developmental model as a framework while implementing student employee trainings, evaluations, and other tools to increase student leadership and professionalism. Data was collected using the Delphi Process where professionals participated in a 4-sequence quantitative study that used a web-based survey technique. Participants of the Toperzer et al. (2011) study included four 2009 Regional Vice Presidents of the National Intramural Recreational Sports Association, as well as five campus recreational professionals from each region chosen by Regional Vice Presidents. Participants completed a sequence of surveys reporting their general thoughts about leadership and very specific best practices to enhance college-student leaders. All results directly related to Chickering’s seven vector developmental model. Themes that emerged from the data included the following: a) leadership opportunities can encourage a student to establish identity; b) training on leadership can help a student to feel more comfortable with their appearance, and; c) performance assessment and trainings helped students to establish clearer goals regarding their career and felt more confident in their decision (Toperzer et al., 2011).

Chickering’s Identity Developmental Model as derived from Erik Erikson’s identity vs. role confusion stage of development provides theoretical grounding for the current research project, especially when one considers that college students and the sub-population of college student athletes are two large groups of students who are trying to formulate their identity while at college, and in particular, formulate a career-related identity. Chickering’s vectors offer a well-grounded approach to understanding the various developmental components faced by college students, as well as the factors that
possibly contribute or influence identity developmental milestones.

**Chapter Summary**

The preceding review of literature indicated that there are inconsistent results in determining the relationship between athletic identity and career decision-making self-efficacy among college students. This literature review makes it clear that no research has been conducted that investigates the influence of professional development engagement among college students and college student athletes and predicting levels of career decision-making self-efficacy. Additionally, prior to the current project, there was no research on potential differences between college student-athletes and college students in general on how the relationship between athletic identity and career decision-making self-efficacy interact.

Conducting this research with college student athletes and CSNA will provide a better understanding of PDE and the role that it plays in the career development process. Determining the relationship between PDE and CDMSE while controlling for athletic identity in college students and determining if there is a difference between athletes and CSNA, will increase awareness of how to meet the needs of college students and college student athletes with respect to their career developmental process while enrolled in college.
Chapter 3: Method

In this chapter, I introduce the methodology of the present study. The sample size of the project and the sampling procedures, as well as the analysis to determine the appropriate sample size are discussed. How participants were solicited and articulation of the procedures for data collection, processing, and analysis are described. Each variable studied and measured, including the dependent variable of Career Decision Making Self-Efficacy (CDMSE), and the independent variables of Professional Development Engagement (PDE) and athletic identity are discussed in detail. Additionally, the moderator variable of athlete vs. non-athlete, and the various control variables that are identified later in this chapter are studied. The research design as well as the instruments used in conducting this study are presented along with a description of the key analysis.

Statement of the Problem

The purpose of this study was to examine the association between Professional Development Engagement (PDE) and Career Decision-Making Self-Efficacy (CDMSE) among college students. This research also looked to determine the association between PDE and CDMSE while controlling for athletic identity among college students. Finally, this study was designed to determine the levels of CDMSE while controlling for athletic identity in order to determine if athletic status (i.e., athlete vs. non-athlete) moderated the relationship between PDE and CDMSE. A moderator is defined as a variable that provides a significant impact amongst the relationship between a given independent variable and a given dependent variable (Warner, 2013). This means that the final
analysis was conducted to determine if there was a significant difference between athletes and CSNA in the association between PDE and CDMSE. There were several control variables included in this research study (gender, year in college, ethnicity, and major) which were used as statistical controls in order to reduce if not fully eliminate the variance of other variable influences, as well as better determine the relationships among the key variables of interest. The decision to implement such control variables is explained in more detail later in the chapter.

**Research Design**

The research design that was utilized for this study was a step-wise multiple regression analysis. First, a demographic analysis was run to determine the mean and standard deviations for each variable. Second, correlations for each construct (PDE, CDMSE, and athletic identity) were run to determine relationships among variables. Step-wise multiple regressions then were utilized to test each hypothesis. Each variable that was included in the specific research questions was entered into the step-wise multiple regression for analysis.

**Sample Size and Power**

The population of interest for this study was college students who were not athletes (CNSA) and college student athletes who were affiliated with National Clearinghouse Athletic Association (NCAA), Division III at one university. The voluntarily basis of athletic participation suggests that these students are making the commitment to be a college student athlete for reasons other than receiving funding. Division III students volunteering to participating in their sport, without monetary
incentives, with an established balance between academics and athletics may provide a balance of student identity and athletic identity suggesting more time for career-related exposure and/or practice. Lastly, due to the proximity of students on campus, the NCAA Division III student population was easily accessible for the researcher to sample. This allowed the researcher to obtain data more readily on student athletes throughout various athletic seasons, as well as obtain a range of college students within various course and major classes during the day and night class sessions.

The sampling frame that was used for this study included all college students and NCAA Division III student athletes at one university in the United States with an undergraduate population of approximately 16,000 students. The sampling frame for both student athletes and non-student athletes included female and male students between the ages of 19-24 in their junior, senior, or fifth year of college. These particular years in college were chosen because students within this age range are the closest to college completion and transitioning into post college plans, according to Chickering’s Identity Developmental Model (Chickering, 1969). Chickering’s states that within this model, young adults this age range are establishing their identity and developing purpose (Chickering 1969; Kim, 2012). Typically, college students in their junior, senior, or fifth year are making career decisions based on their identity as an athlete, and as such are preparing for future goals in terms of their athletic participation (Kim, 2012). Given these facts, the identity of being a college athlete should be fairly well formed in the minds of participants at this point in their college careers.

Due to the previous research regarding career developmental stage and level of
identity among this group of college students, the current research study focused on this particular age group, college students and student athletes who are presumably focused on their future careers. To ensure confidentiality, the facility will be referred to as XYZ University. XYZ University offers eight Division III sports for women (basketball, field hockey, lacrosse, soccer, softball, swimming, track & field, and volleyball) and seven Division III sports for men (football, baseball, basketball, lacrosse, soccer, swimming, and track & field).

The research questions were investigated via a stepwise multiple regression analysis. Given that the dependent variable (CDMSE) is considered continuous in nature, and given that multiple independent variables (PDE, athletic identity, and several statistical controls) were used, a multiple linear regression analysis was appropriate (Richey, 2008). Power analysis for a multiple linear regression is based on the amount of change in R-square that is credited to the variables of interest (Cohen, 1988). Power analysis for a multiple linear regression also is based on the total number of predictors used in the analysis. There were six possible independent predictors used in the regression equation; these include athletic identity, Professional Development Engagement, ethnicity, gender, years in college, and major. The key independent variables were athletic identity and Professional Development Engagement. Based on this information, a G*Power analysis was conducted using an \textit{a priori} multiple regression approach (fixed model, R-squared deviation from zero) with an effect size of 0.15, and error probability of 0.05, and a nominal power of 0.80. On the basis of these parameters, the final sample size recommendation was 109 subjects. As such, the final obtained
sample size of 156 was sufficient for the current investigation. As mentioned previously, the convenience sample for this research project may be used to make generalizability inferences to other universities similar to XYZ University in characteristics including size, location, and the presence of Division III athletics.

The goal of most quantitative studies is to generalize any statistical results to the total population of interest (Gall, Gall, & Borg, 2006). The sample that was drawn from the population for this research study was a sample of convenience, meaning participants were not randomly selected but were selected because they were readily available to the researcher (Warner, 2013). To achieve the goal of generalizability, the researcher originally proposed the current project to have at least 150 participants in the sample, 75 of whom were student athletes and 75 who were not student athletes. The total sample size included 156 participants, 80 athletes and 76 students who were not athletes.

As previously mentioned, the determination of the sample size of 109 was computed by using the G*Power (Faul, Erdfelder, Buchner, & Lang, 2009; Faul, Erdfelder, Lang, & Buchner, 2007) power program. As Faul et al. (2009) note, the G*Power program is a stand-alone power analysis program that will help a researcher determine the appropriate \textit{a priori} statistical sample size for a desired investigation as a function of desired power, a desired effect size, and a specific statistical test. It should be noted that Cohen (1988) recommends .80 as an optimal power (i.e., the ability of a statistical test to detect a significant effect) for any statistical test, and that an effect size (i.e., the strength of a statistical association) of 0.15 is considered appropriate to be generalizable to the targeted region. The sample size chosen was based on the
combination of these formulas relative to the number of predictors.

**Variables and Measures**

A review of the research literature for each variable and corresponding assessments was conducted to identify and locate measurement instruments for the non-demographic independent variables (athletic identity and Professional Development Engagement) and the dependent variables (career decision-making self-efficacy). Suitable inventories were identified for the purpose of measuring athletic identity, Career Decision-Making Self-Efficacy, and Professional Development Engagement. Data for these constructs was collected using the following three scales: *Athletic Identity Measurement Scale* (AIMS; Brewer et al., 1993); *Career Decision Self-Efficacy Short Form Scale* (CDSE-SF; Taylor & Bez, 1983); and *Professional Development Engagement Scale* (PDES; Blau & Snell, 2012). It is important to mention that once these measurements were identified, all three scales were converted to z-scores in an effort to standardize the variables, giving a mean of 0 and standard deviation of 1.0. The process used to select these instruments is described below.

**Dependent Variable: Career Decision-Making Self-Efficacy**

The dependent variable for the current research project was Career Decision Making Self-Efficacy (CMDSE). The *Career Decision Making Self-Efficacy Scale* is a self-report psychometric tool designed to measure an individual’s belief that they can successfully complete a task or tasks necessary to make a career decision (Betz, Hammond, & Multon, 2005; Betz & Klein, 1996). It was derived from Bandura’s (1977) concept of self-efficacy expectations, which are defined as the beliefs that one can
perform specific behaviors. These beliefs and expectations successfully predict behavioral choices, performance, and persistence (Crites, 1981). In this case, the beliefs apply to the career decision-making realm. The original version of the CDMSE Scale consisted of 50 items that were broken down into five different 10-item subscales (i.e., Self-appraisal, Occupational Information, Goal Selection, Planning and Problem Solving; Betz & Taylor, 1983). The internal consistency of the CDMSE Scale (measured using coefficient alphas) has been found to range from .86 to .89 for the subscales and .97 for overall scales (Taylor & Betz, 1983; Luzzo, 1993), suggesting the item content is highly consistent across all 50 items. A test-retest reliability of .83 has been reported for the overall score over a 6-week period (Luzzo, Funk, & Strang, 1996).

The shortened and revised version of the CDMSE Scale, the Career Decision Self-Efficacy Short Form (CDSE-SF; Betz & Klein, 1996), was the inventory utilized in this particular research study to measure a college student’s level of CDMSE. This version of the instrument was shortened from 50 to 25 items; the 25-item version is considered to be the more desirable measure of evaluations of career inventories (Betz, Hammond, & Multon, 2005). The CDSE-SF is considered to be at least as reliable as the original 50-item measurement, as the CDSE-SF has an overall coefficient alpha of .94 (Betz & Klein, 1996). The Career Decision Making Self-Efficacy Scale had a Cronbach alpha of .961, suggesting a strong level of reliability. The primary advantage of the CDSE-SF is that it measures career decision-making self-efficacy in a more efficient manner through the use of only 25 items representing Crites’ (1978) five career choice competencies in his model of career maturity (Betz & Taylor, 2006). The career choice
competencies include self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving—corresponding subscales of the CDSE-SF. Items are rated on a 5-point Likert-type scale ranging from 1 (not confidence at all) to 5 (complete confidence). Thus, the possible total scores ranged between 25 and 125, with higher scores on CDSES-SF indicating greater levels of career decision self-efficacy (Betz et al., 2005). Researchers reported the internal consistency reliability of the short form ranged from .73 (self-appraisal) to .83 (goal selection) for the subscales and .94 for the total score (Betz et al., 1996).

**Independent Variable: Professional Development Engagement**

One of the independent variables utilized in this research was Professional Development Engagement (PDE). Although the concept of professional development engagement has been examined in the past (see Snell, 2012; Wendlandt & Rochlen, 2008; Wessel, Christian, & Hoff, 2003) it is a relatively unexplored construct within the counseling literature. The term professional development engagement refers to behaviors students engage in such as on-site practice interviews, internships, and cooperative experiences to obtain a richer exposure to particular career interests (Snell, 2012). There is a generally recognized need for increased professional development and engagement activities among undergraduates, especially as they near graduation from college (Wendlandt & Rochlen, 2008; Wessel, Christian, & Hoff, 2003). Such activities including mock practice interviews, videotaping an interview, resume development and critiques, campus recruiting/employer networking events, and internships, all with the intent of augmenting the educational experience of undergraduates and preparing/helping
students find a good job after they graduate.

A measure to operationalize professional development and engagement was
developed recently; this instrument is the *Professional Development and Engagement Scale* (PDES; Snell, 2012; see Appendix 4). The *PDES* consists of 10 main items, which
ask respondents whether or not they feel that certain activities (such as multiple résumé
critiques, on-campus recruitment, mock interviews, and attendance at professional
development activities offered through student organizations) contributed to their
professional development. Each of the ten items in the scale uses a 6-point response
format (1= strongly disagree and 6= strongly agree). Two additional behavioral items
also are included in the scale. The first additional item asks respondents how many
student professional organization meetings they attended on average during a semester,
with a response scale that ranges from 1 = none, 2 = 1-3 a semester, 3 = 4-6 a semester, 4
= 7-9 a semester, 5 = 10-12 a semester and 6 = 13 or more a semester. The second
additional item asks respondents how many formal internships or co-ops they participated
in while a student at their university. The response scale for this question ranges from 1
= none, 2 = 1 events, 3 = 2 events, 4 = 3 events, 5 = 4 events, and 6 = 5 or more events.
All 12 questions are designed to work in concert as part of the overall *PDES*, as all 12
items are measured on a 6-point response scale (Blau et al., 2014).

As the measure is relatively new, full validation studies independent of the
creation of the scale have yet to be conducted. However, the 12-item *PDES* has been
utilized with several samples of undergraduates (Lipka, 2008; National Association of
Colleges and Employers, 2013) and has demonstrated good reliability evidence. In a
study that included a sample of 308 students, the alpha reliability coefficient of the overall 12-item PDES was found to be .93 (Snell, 2012). The PDES also had a very good level of internal consistency with a Cronbach alpha of .888.

To score the PDES, all responses were summed. The total score range for this instrument is 10 to 60. The highest score an individual can receive on this scale (60) would suggest that an individual reports “strongly agreeing” to participation in all of the professional development engagement activities. For the purposes of this research, the 10 questions on the PDE Likert scale were used to measure the PDE experiences on a six-point Likert scale per question. Although originally a 12-question instrument, the two “school specific” behavioral questions were not used, since they only apply to the university where the instrument was developed. An additional column was added to the Likert scale constituting a student’s response of no participation in a particular behavior. The column of “Did Not Participate” gave the option of selecting “0.” Thus, the score range for the modified PDES instrument score range 0 to 60 overall.

**Independent Variable: Athletic Identity**

Athletic Identity was utilized as an independent variable for this particular research. A review of the literature yielded two possible instruments for measuring athletic identity, the *Athletic Identity Measurement Scale* (AIMS) and *Athletic Identity Questionnaire* (AIQ). The *Athletic Identity Questionnaire* (AIQ; Anderson, 2004) was considered and deemed to be not applicable to this study, mainly because the AIQ is a broad scale focusing on athletic identity from the past (e.g., intended for retired athletes). This scale has been used to study former male and female high school and/or collegiate
athletes and their reflection of how being an athlete may have impacted their current life. In contrast, the *Athletic Identity Measurement Scale* (AIMS; see Appendix 2; Brewer et al., 1993) has been utilized to measure current athletes and their present thoughts and perspectives associated with their athletic identity (Houle, & Kluck, 2015; Tyrance, Harris, & Post, 2013; Watson & Kissinger, 2007). Because this investigation is examining current athletes, the AIMS were determined to be a more appropriate tool than the AIQ.

The AIMS is a 10-question inventory with a 7-point Likert-type response scale for each item (1= Strongly Disagree; 7= Strongly Agree). The AIMS yields a single score for each item between 1 and 7, and the values for all ten items are added together to see the strength (or centrality) of athletic identity for each subject. None of the items in the scale need to be reverse coded. The range of possible scores is 10 to 70, with higher scores indicating greater athletic identity in the respondent. Examples of the AIMS questions include “I consider myself an athlete,” “I spend more time thinking about sport than anything else,” and “Other people see me mainly as an athlete.”

Questions on the AIMS are scored and summed to yield one total score. Total AIMS scores can range between 7-70, with higher scores demonstrating strength and exclusivity of identification with the athletic role. Researchers suggest that items 1 and 2 on the AIMS are used to measure self-identity, items 3 and 7 are used to measure social-identity, items 4, 5, 6, and 9 are used to measure exclusivity, and items 8 and 10 are used to measure negative affectivity (Martin, Mushett, & Eklund, 1994). Raw subscale scores can be calculated for each subscale and can range from 4-28 for exclusivity and 2-14 for
each of the remaining three subscales. Higher scores indicate that the individual has a
stronger association with the dimension measured (i.e., athletic identity).

The initial subject pool of the AIMS measurement consisted of 800 athletes and
CSNA (Brewer et al., 1993). Results of an investigation into the reliability of the AIMS
concluded that the internal consistency of the AIMS is strong, with the test-retest
reliability coefficient for the AIMS being .89, a value which indicates very good
inventory stability over a two-week period (Brewer et al., 1993). Evidence of construct
validity was examined in two different studies by correlating the AIMS with other scales
measuring similar constructs (Brewer et al., 1993). In the first study, convergent
construct validity was demonstrated as the participants’ scores on the AIMS were highly
and positively correlated with the scores on the Perceived Importance Profile (PIP;
Phoenix, Faulkner, & Sparkes, 2005), which is a measure that estimates the importance a
person places on physical strength and sport competence (Wójcicki et al., 2013). In a
separate study that used collegiate football players as a sample, scores on the AIMS
correlated positively with the Perceived Importance Profiles of Sports Competence Scale
(r = .42). Based on the above, the AIMS was chosen to measure athletic identity for this
study, as there is evidence of it being a reliable and valid instrument to measure athletic
identity within the college student athlete population (Reifsteck, 2011). The overall
reliability of the AIMS measurement showed strong evidence of reliability with a
Cronbach alpha of .922.

Moderator Variable: Athletic Status

Athletic status (i.e., athlete vs. non-athlete) was established as the moderator
variable for this research study. This moderating variable was used to determine if athletic status influences the relationship between PDE and CDMSE while controlling for other variables in the regression equation. Athletic status was coded as athlete= “1”, and non-athlete = “0”. Athletic status was defined as any student who participates in an NCAA Division III sport at XYZ University. The non-student athletes were students who did not participate in varsity athletics at the University. The interaction term of “PDE*Athlete” was created to model the moderating effect of athlete vs. non-athlete status on PDE.

**Control Variables**

Demographic information also was gathered in addition to the previously mentioned data/constructs. One purpose of obtaining specific demographic information was to rule out any participants who did not meet the inclusion criteria for this survey (e.g., freshman or sophomore student). Also, this information was helpful to describe the sample being researched. Further, demographic data were used as statistical controls as a way to better isolate the effects of the key independent variables of athletic identity and Professional Development Engagement on the dependent variable of Career Decision Making Self-Efficacy. The demographic data that was collected in this study includes information on respondent ethnicity, gender, year in school (i.e., junior, senior, or fifth-year senior), and academic major.

Ethnicity was measured by asking participants to check which category applies to them (White, Black/ African American, Hispanic/Latino/a, Asian, American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, Other). Gender was measured
by having participants indicate whether they identify as male or female. Year in school was measured by having participants indicate their status on campus (junior, senior, fifth-year senior). Major was classified by the colleges with which the students were affiliated. All of these demographic variables were added as control variables to the regression equation to determine if they provided a significant difference in associations with the research question.

**Analytic Procedures**

Prior to collecting data for this study, approval to conduct this investigation was sought and obtained from XYZ University’s Institutional Review Board (IRB). Once IRB approved the project, a survey that contains all of the aforementioned measures (*Career Decision Short Form, Athletic Identity Measurement Scale, and Professional Development Engagement Scale*) and demographic questions was fielded to potential respondents via the online website Survey Monkey. Survey Monkey is an online site that was created to field surveys electronically to samples drawn from a given population of interest.

After serious consideration, it was concluded that an electronic method of data collection would be a more efficacious technique with respect to data collection (as compared to a paper and pencil method) for this research project. Various researchers have studied the benefits of utilizing electronic surveys as opposed to paper and pencil surveys (Fricker & Schonlau, 2002; McCabe, Boyd, Couper, Crawford, & d'Arcy 2002; Mehta & Sivadas, 1995; Schonlau, Fricker, & Elliott, 2002); the results associated with these studies suggest that electronic surveys are more cost-effective and time-effective in
terms of data collection. Further, it has been found that participants in surveys tend to feel more comfortable and are more likely to be both honest and forthcoming when completing electronic surveys as opposed to both paper and face-to-face surveys (Fricker & Schonlau, 2002). Electronic surveys also often offer a feature that prevents a participant from moving onto the next survey question until the current question is answered, thus ensuring a greater chance of full survey completion by a given participant. Additionally, it is a fact that today’s undergraduate students have grown up in an era of having technology at their fingertips. Indeed, current research has found that today’s college students are most comfortable and more willing to complete surveys that are computer-based as opposed to paper and pencil based (McNeely, Nonnemaker, & Blum, 2002). Similarly, electronic submission also greatly reduces the chance of scoring errors. Because of these reasons, the current project used an electronic-based survey as a data collection tool.

The combined survey had a total of 50 items that took the students an average of 15 to 20 minutes to complete. The researcher contacted the Athletic Director and sports psychologist for XYZ University athletics and obtained permission to introduce and administer the survey to the college student athletes. The Athletic Director provided a letter to submit to the IRB demonstrating approval for the researcher to conduct the research project. The Athletic Director and sports psychologist contacted all of the head and assistant coaches in the university and introduced the researcher to said personnel. The researcher worked with each team individually and had a scheduled time to speak with the team regarding the research request. All data collection for the college athletes
took place in a computer lab in the recreational hall at XYZ University. Students who visited the recreational hall were provided with an iPad that had the disclosure statement and survey provided. Prior to completing the survey, students electronically reviewed the purpose of the research study, disclosure and consent information, the time it takes to complete the survey, and the process for data collection.

In order to solicit participants who were CSNA, the researcher contacted the Vice President for Student Development and Campus Life at XYZ University and obtained permission to communicate with professors and adjunct professors within the university to request research participants. Through email and individual meetings, the researcher clearly explained to the Vice President of Student Development and interested professors the topic that was being researched, goal of the study, and the type of participants being requested (i.e., juniors, seniors, and fifth year students). Additionally, a follow-up email to interested professors titled, “Letter to Participate in Study,” was sent to reiterate the purpose of the study as well as logistical considerations (e.g., time needed to complete study) and included a link to SurveyMonkey, where the survey could be retrieved.

Once the researcher obtained permission to speak to an instructor’s class regarding the research project, the researcher attended a class lesson, introduced the research study, and asked for volunteers to participate after class. Students who were interested in completing the survey met outside after class and were provided with an iPad that contained the survey information. Similar to the college student athletes, prior to completing the survey, the college students electronically reviewed the purpose of the research study, disclosure and consent information, the time it would take to complete the
survey, and the process for data collection before the request to voluntarily participate in the project.

The electronic survey was conducted through the SurveyMonkey website. The first page of the survey was a copy of the informed consent statement that outlined the parameters participants had to agree to in order to participate in the study. At the end of the informed consent statement, potential participants read, “By clicking next at the bottom of this page, you are giving your consent to participate in this research study.” Data collected from all participants remains anonymous, again recognizing that a paper-pencil version of the survey would serve as a secondary method of data collection, if, in fact, needed. However, this method was not needed. Once data was collected, it was stored securely and confidentially in an encrypted file on the researcher’s password-protected personal computer and will remain there for three years.

**Data Analysis**

SPSS version 23 was used to analyze the quantitative data collected as part of this project. All data was properly coded and cleaned in advance of all statistical analyses in accordance with procedures outlined by Cronk (2012). Descriptive statistics were computed to discover the basic patterns within the data. Specifically, means and standard deviations were calculated for all variables used in the investigation.

Prior to the multivariate data analyses, the independent variables, dependent variable, and moderating variable were converted to Z-scores in an effort to create a standardized variable where the mean was 0 and standard deviation was 1. A Pearson’s $r$ correlation was then run to determine the strength of the relationships among all variables.
(CDMSE, PDE, and athletic identity) at the bivariate level prior to running the multiple linear regression analyses. This was done to provide better context for the later multivariate analyses. Understanding the strength of relationship between each variable set at the bivariate level provides preliminary knowledge of potential relationships that may exist within the multivariate analyses. If there are significant relationships between variables at the bivariate level, then the Pearson’s correlations suggests that the research analysis is worth studying at a multivariate level.

A stepwise multiple regression equation was then used to investigate the association between the independent variable of Professional Development Engagement (PDE) and the dependent variable of CDMSE, net of the demographic controls. The results of this first multiple regression equation were used to answer Research Question 1. A stepwise multiple regression algorithm was used to form the basis of the regression equation, as a stepwise procedure followed an automatic process of conducting t-tests to analyze the optimal predictive variables (Punch, 2005).

The significance level for the multiple regression was set at .05. This significance level was used to determine if there was a statistically significant relationship between variables (Gay, Mills, & Airasian, 2011). A statistically significant relationship means that a relationship is unlikely to have occurred by chance (King & Mimium, 2002). Achieving an alpha level of .05 significance would indicate a 95% level of confidence that the relationship does not occur by chance. Setting a .05 significance level in an initial study is recommended over a more stringent .01 level, as an alpha of .01 increases the likelihood of making a Type II error. A Type II error occurs when one fails to reject a
false null hypothesis (Gay et al., 2011). It should also be noted that the various assumptions of multiple linear regression (linearity, homoscedasticity, normality of errors, independence of errors and multicollinearity) were checked in accordance with the procedures outlined by Allison (1999), and will be detailed in the section below. Violations of the assumptions of multiple linear regression were dealt with as per the recommendations outlined by Allison (1999).

The SPSS program was then utilized to determine the association between PDE and CDMSE while controlling for athletic identity, net of the demographic controls among college students. This particular regression equation was used to answer the second research question. In order to answer the third research question, a stepwise multiple regression was computed utilizing a interaction variable (PDE*athlete) to see if athletic status moderated the relationship between PDE and CDMSE while controlling for athletic identity.

**Multiple Regression Tests of Assumptions**

Allison (1999) outlined several assumptions that must be met in multiple linear regressions: these include *linearity, homoscedasticity, independence of errors, normality of errors*, and *multicollinearity*. The first assumption, *linearity*, proposes that the relationships of the variables under investigation are linear in nature. The way to investigate whether this assumption holds is to check what is known as the *plot of the regression standardized residuals*, or the *Normal P-P Plot*. As long as a linear trend is evident in the plot, the assumption of linearity is met (Mertler & Vannatta, 2010). The Normal P-P Plot shows that this assumption is met for the sample.
The second assumption, *homoscedasticity*, confirmed that the degree of random noise (or error) in the regression equation remained relatively constant or homoscedastic (Allison, 1999). The Breusch–Pagan Test (Breusch & Pagan, 1979) is essentially a chi-square test for heteroscedasticity. If the value of chi-square is statistically significant, then the data are considered heteroscedastic and corrective measures are required. The Breusch–Pagan test was statistically non-significant for the sample ($\chi^2 = 13.932$, $df = 15$, $p = 0.531$). This assumption was met.

The third assumption, *independence of errors*, confirms that the disturbance terms in the regression equation were uncorrelated. This assumption was checked via the Durbin–Watson statistic. The Durbin–Watson statistic ranged from 0 to 4, with a mid-range value of 2. As a general rule, values of the Durbin–Watson statistic closer to 2 indicate independence of errors; values below 1 and above 3 suggest correlation of errors (Gujarati, 2003). The Durbin–Watson statistic for the sample was 1.940. The assumption was met.
The fourth assumption, *normality of errors*, was predicated on the understanding that all errors are normally distributed in a regression equation. This assumption is critical only when there are fewer than 100 cases in a sample, and that as long as all other assumptions are met, the violation of this assumption can be discounted (Allison, 1999). The Shapiro–Wilk Test of the standardized residuals is the test used to check this assumption (Shapiro & Wilk, 1965). The value of the test was statistically significant for the sample (.964, $df = 160$, $p < .001$). This assumption was not met; however, given that the overall sample was greater than 100, and given that all other assumptions were met, it is the case that corrective action is unnecessary at this time.

Multicollinearity is not a violation of the assumptions of regression per se; however, multicollinearity does make it difficult to find statistically significant coefficients within a regression model (Allison, 1999). Multicollinearity is typically checked by calculating Variance Inflation Factors, or VIFs. A VIF of 10 or greater typically indicates potential multicollinearity (Anderson, Sweeney, & Williams 2002). All VIFs in all modes in the sample were under 10. This assumption was met.

**Chapter Summary**

In this chapter, I provided an overview of the research design that was utilized for this study. Additionally, a review of the sampled population was provided which explained how participants were solicited. An explanation of each measurement included in this research as well as how the research was conducted was specified. Lastly, a description of how the data analysis was run and how the research was checked for multiple regression assumptions was provided.
Chapter 4: Results

The purpose of this study was to examine the association between Professional Development Engagement (PDE) and Career Decision Making Self-Efficacy (CDMSE) among college students. In addition, I examined the association between PDE and CDMSE when controlling for Athletic Identity (AI). Lastly, I examined the moderating effect of athletic status on the relationship between PDE and CDMSE. The sample was comprised of 156 participants from a public university in the northern region of the United States, 80 of whom were athletes, and 76 of whom were CSNA.

All participants completed a set of inventories online via Survey Monkey, consisting of a demographic questionnaire and three instruments: Athletic Identity Measurement Scale; AIMS (Brewer, Van Raalte, and Linder, 1993), the Career Decision Self-Efficacy-Short Form; CDSE-SF (Betz & Klein, 1996), and the Professional Development Engagement Scale; PDES (Blau & Snell, 2012). The AIMS measure an individual’s identified level of athletic identity. The CDSE-SF assesses the level of self-efficacy an individual feels regarding their career decisions. The PDES was used to measure the level of career-related activities outside of the school/university an individual participates in. General demographic data collected included race/ethnicity, gender, year in college, and major. The hypotheses are addressed within each discussion section.

Descriptive Results

Table 1 reports descriptive statistics (i.e., frequencies and percentages) that were calculated for all variables in the sample. The overall sample included 156 participants
who completed the online survey. The data was then entered into SPSS where it was analyzed. The original dataset had 157 responses. Among these 157 responses, one person had systematic missing data and was removed from the dataset. This resulted in a final dataset of 156 valid cases, 80 of whom were athletes and 76 of whom were CSNA. The removal of the one case represented a 0.6% attrition of cases from the dataset.

Demographic variables were collected and organized into categorical groupings. All respondents were asked to report the following information: race/ethnicity, gender, major, year in college, and their academic major. Ethnicity was organized into four categorical groups based on the number of responses: White/Caucasian, Black, Hispanic, and Other. These demographic variables were used as statistical controls in the investigation to better understand the impact that the primary focal variables of PDE, athletic identity and athletic status have on CDMSE.

Percentages and frequencies were calculated for all categorical variables for the entire sample in Table 1. Ritchey (2008) noted that for categorical variables, percentages and frequencies are the appropriate descriptive statistics to report. Half (n=78; 50.0%) of the respondents in the sample were White. Two-thirds of the respondents in the sample (n=99; 63.5%) were female. Half of all respondents (n= 82; 52.6%) identified as a fourth-year senior. Two-thirds of respondents have a major that is either in the College of Humanities and Social Sciences (n=53; 34.0%) or the College of Education and Human Services (n=49; 31.4%). Nearly six in ten (n=46; 57.5%) of the athletes in the sample were White. Furthermore, slightly more than half of the athletes in the sample (n=43; 53.8%) were female. Slightly more than half of the athletes in the sample (n=46;
57.5%) identified as a fourth-year seniors. Two-thirds of athletes in the sample had a major that is either in the College of Humanities and Social Sciences (n=31; 38.8%) or the College of Education and Human Services (n=24; 30.0%).

A total of 82 separate majors were reported. In order to more effectively organize and classify this variable, the decision was made to collapse respondents’ majors into one of the five colleges at XYZ University. For the purposes of this variable, the categories were the School of Business (SOB), the College of the Arts (COA), the College of Science and Mathematics (CSM), the College of Humanities and Social Sciences (CHSS), and the College of Education and Human Services (CEHS). The greatest number of participants declaring a major in a specific school was the College of Humanities and Social Sciences (n=53; 34.0%), with the College of Education and Human Services second (n=49; 31.4%), the School of Business third (n=27; 17.3%), and the College of Arts second to last (n=14; 9.0%).

Slightly over half of all respondents (n=82; 52.6%) identified as fourth-year seniors, with slightly more athletes identifying as fourth-year (n=46; 57.5%). Four in every ten respondents in the sample identified as a junior (n=62; 39.7%) with fewer athletes reporting junior status (n=27; 33.8%). Lastly, fifth year students accounted for approximately eight percent of the overall sample (n=12; 7.7%), a number that was similar for the athletes in the sample (n=7; 8.8%).
Table 1

Summary of demographic scores on nominal variables among the athletes, CSNA and the total sample.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Athletes Frequency</th>
<th>Percent</th>
<th>CSNA Frequency</th>
<th>Percent</th>
<th>All Respondents Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>46</td>
<td>57.5%</td>
<td>32</td>
<td>42.1%</td>
<td>78</td>
<td>50.0%</td>
</tr>
<tr>
<td>Black</td>
<td>13</td>
<td>16.3%</td>
<td>14</td>
<td>18.4%</td>
<td>27</td>
<td>17.3%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>17</td>
<td>21.3%</td>
<td>22</td>
<td>28.9%</td>
<td>39</td>
<td>25.0%</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>5.0%</td>
<td>8</td>
<td>10.6%</td>
<td>12</td>
<td>7.7%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
<td>53.8%</td>
<td>56</td>
<td>73.7%</td>
<td>99</td>
<td>63.5%</td>
</tr>
<tr>
<td>Male</td>
<td>37</td>
<td>46.3%</td>
<td>20</td>
<td>26.3%</td>
<td>57</td>
<td>36.5%</td>
</tr>
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<td>Type of College</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOB</td>
<td>14</td>
<td>17.5%</td>
<td>13</td>
<td>17.1%</td>
<td>27</td>
<td>17.3%</td>
</tr>
<tr>
<td>ARTS</td>
<td>7</td>
<td>8.8%</td>
<td>7</td>
<td>9.2%</td>
<td>14</td>
<td>9.0%</td>
</tr>
<tr>
<td>CHSS</td>
<td>31</td>
<td>38.8%</td>
<td>22</td>
<td>28.9%</td>
<td>53</td>
<td>34.0%</td>
</tr>
<tr>
<td>CEHS</td>
<td>24</td>
<td>30.0%</td>
<td>25</td>
<td>32.9%</td>
<td>49</td>
<td>31.4%</td>
</tr>
<tr>
<td>CSM</td>
<td>4</td>
<td>4.9%</td>
<td>9</td>
<td>11.9%</td>
<td>13</td>
<td>8.3%</td>
</tr>
<tr>
<td>Year in College</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Juniors</td>
<td>27</td>
<td>33.8%</td>
<td>35</td>
<td>46.1%</td>
<td>62</td>
<td>39.7%</td>
</tr>
<tr>
<td>Seniors</td>
<td>46</td>
<td>57.5%</td>
<td>36</td>
<td>47.4%</td>
<td>82</td>
<td>52.6%</td>
</tr>
<tr>
<td>Fifth-Year</td>
<td>7</td>
<td>8.8%</td>
<td>5</td>
<td>6.6%</td>
<td>12</td>
<td>7.7%</td>
</tr>
<tr>
<td>N</td>
<td>80</td>
<td>100.0%</td>
<td>76</td>
<td>100.0%</td>
<td>156</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 2 provides demographic descriptions of the three focal variables: CDMSE, PDE, and Athletic Identity. These variables were converted to z-scores through SPSS to standardize the variables, such that each had a mean of 0 and a standard deviation of 1. Means and standard deviations were calculated and recorded for each of these variables. Additionally, an interaction term was created to separate the athletes from CSNA, where Athletes = 1 and CNSA = 0.

Table 2

Summary of scores on ordinal variables among athletes, CSNA, and total sample.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Athletes M (SD)</th>
<th>CSNA M (SD)</th>
<th>Total Sample M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDMSE</td>
<td>.12 (.91)</td>
<td>-.12 (1.08)</td>
<td>.00 (1.0)</td>
</tr>
<tr>
<td>Athletic Identity</td>
<td>.42 (.84)</td>
<td>-.44 (.97)</td>
<td>.00 (1.0)</td>
</tr>
<tr>
<td>PDE</td>
<td>.08 (1.01)</td>
<td>-.09 (.98)</td>
<td>.00 (1.0)</td>
</tr>
<tr>
<td>Athlete</td>
<td>1.00 (0.00)</td>
<td>0.0 (0.00)</td>
<td>.51 (.50)</td>
</tr>
</tbody>
</table>
A Pearson correlational analysis was run to determine the bivariate relationships among the key independent variables and the dependent variable prior to all multivariate analyses. Establishing the strength of relationships among variables at the bivariate level provides preliminary evidence of existing relationships among variables. Table 3 provides the correlation results for the variables being tested among CSNA (n=76) and athletes (n=80). A statistically significant correlation between CDMSE and PDE was present within both the athlete and non-athlete samples. For CSNA, when PDE increases, CDMSE increases ($r = .26, p < .05$). Comparably with athletes, when PDE increases, CDMSE again increases ($r = .23, p < .05$). Both correlations are positive, moderate in strength, and statistically significant at an alpha level of .05. Additionally, a correlation between CDMSE and athletic identity also was present within the data for athletes and CSNA. For CSNA, as athletic identity increases, CDMSE increases ($r = .32, p = <.05$). Comparably with athletes, when athletic identity increases, CDMSE increases ($r = .27, p = <.05$). Both correlations are positive, moderate in strength, and statistically significant at an alpha level of .05. Lastly, a statistically significant correlation between athletic identity and PDE was not present within the data for both athletes and CSNA.

The correlation results provide preliminary evidence of what types of statistically significant relationships existed within the data prior to running the multiple regression analysis. The positive correlation between CDMSE and athletic identity among CSNA suggest that higher levels of athletic identity may lead to stronger CDMSE, and that athletic identity itself among both college student athletes and CSNA may also impact CDMSE. Based on these findings, it is probable that PDE and CDMSE will be related
within the regression equation when controlling for athletic identity, as both PDE and CDMSE are related at the bivariate level.

Table 3

*Summary of Correlation for scores on CDMSE, PDE and Athletic Identity*

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.CDMSE</td>
<td>___</td>
<td>.26*</td>
<td>.32**</td>
</tr>
<tr>
<td>2.PDE</td>
<td>.23*</td>
<td>___</td>
<td>.22</td>
</tr>
<tr>
<td>3.Athletic Identity</td>
<td>.27*</td>
<td>.07</td>
<td>___</td>
</tr>
</tbody>
</table>

*Note.* Intercorrelations for CSNA (n=76) are presented above the diagonal, and intercorrelations for athletes (n=80) are presented below the diagonal. * = p < .05, ** = p < .001.

**Multiple Regression Analysis**

Table 4 presents the results of the stepwise multiple linear regression of a respondent’s career decision-making self-efficacy onto the key independent predictors, a moderator variable, and several control variables for the entire college student sample. Models 1 through 4 hold statistical results that answer all three research questions. It should be noted here that a stepwise algorithm was used as part of this multiple linear regression equation. Additionally, dummy variables were created as statistical control variables to account for certain demographic factors. For instance, the variable ethnicity is reported in Table 4 as a series of dummy variables that are coded to indicate if a respondent is White, Black, or Hispanic. For each of these separate variables, the contrast category is coded as “Other”, which means that a respondent is something other than White, Black, or Hispanic. Gender is also coded as a dummy variable where there are two choices: female (the category of interest) and male (the contrast category).
contrast category for Type of School is College of Science and Mathematics (CSM), and the contrast category for Year in College is senior status. The decision to select these particular contrast categories for the dummy coding of these variables is based on the lower number of participant responses for the contrast category. For instance, “Other” was reported the least amount of times in ethnicity, the male gender was less represented than the female gender, and a smaller response rate and the College of Mathematics and Science was the smallest number of Type of School for student responses.

Model 1 shows the results of a regression analysis run with CDMSE as the dependent variable. In this equation CDMSE was regressed onto the demographic variables as a way to determine the relationship between all demographic variables (race, gender, type of school and year in college) and CDMSE. This was done to see if there were any statistically significant relationships within the data beyond what was discovered during the bivariate correlational analysis. This model shows the unstandardized b, standardized beta, and standard error of b results for each variable. In Model 1, junior status was the only variable found to be a statistically significant predictor of the dependent variable ($b = -0.43$, $t = -2.483$, $p < .05$). The negative coefficient suggests that juniors have lower levels of CDMSE when compared to seniors and fifth-year seniors. The standardized beta coefficient of -0.21 suggests that this independent variable had the strongest effect on the dependent variable when compared to the value of all other standardized betas in the model, as the standardized beta is a measure of effect size.
### Table 4

**Summary of Stepwise Multiple Regression Analysis for Variables Predicting CDMSE (N=156)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
<th></th>
<th>Model 4</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Constant</td>
<td>.01</td>
<td>.40</td>
<td>.17</td>
<td>.38</td>
<td>.04</td>
<td>.38</td>
<td>.03</td>
<td>.38</td>
<td>.16</td>
<td>.16</td>
<td>.03</td>
</tr>
<tr>
<td>White</td>
<td>.10</td>
<td>.31</td>
<td>.05</td>
<td>.38</td>
<td>.12</td>
<td>.30</td>
<td>.33</td>
<td>.16</td>
<td>.16</td>
<td>.33</td>
<td>.30</td>
</tr>
<tr>
<td>Black</td>
<td>-.06</td>
<td>.35</td>
<td>-.02</td>
<td>.34</td>
<td>.01</td>
<td>.34</td>
<td>.26</td>
<td>.10</td>
<td>.10</td>
<td>.26</td>
<td>.34</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-.01</td>
<td>.34</td>
<td>-.01</td>
<td>.32</td>
<td>.04</td>
<td>.30</td>
<td>.32</td>
<td>.13</td>
<td>.31</td>
<td>.33</td>
<td>.13</td>
</tr>
<tr>
<td>Gender</td>
<td>-.06</td>
<td>.18</td>
<td>-.03</td>
<td>-.17</td>
<td>-.05</td>
<td>.01</td>
<td>.17</td>
<td>.00</td>
<td>.01</td>
<td>.17</td>
<td>.00</td>
</tr>
<tr>
<td>SOB</td>
<td>.06</td>
<td>.35</td>
<td>.02</td>
<td>-.32</td>
<td>-.12</td>
<td>-.32</td>
<td>-.32</td>
<td>-.12</td>
<td>-.32</td>
<td>-.32</td>
<td>-.12</td>
</tr>
<tr>
<td>ARTS</td>
<td>-.27</td>
<td>.38</td>
<td>-.08</td>
<td>-.60</td>
<td>-.17</td>
<td>-.54</td>
<td>.37</td>
<td>-.16</td>
<td>-.53</td>
<td>.37</td>
<td>-.15</td>
</tr>
<tr>
<td>CHSS</td>
<td>.23</td>
<td>.32</td>
<td>.11</td>
<td>.31</td>
<td>.02</td>
<td>.01</td>
<td>.30</td>
<td>.00</td>
<td>.01</td>
<td>.30</td>
<td>.01</td>
</tr>
<tr>
<td>CEHS</td>
<td>.40</td>
<td>.32</td>
<td>.19</td>
<td>.32</td>
<td>.50</td>
<td>.04</td>
<td>.31</td>
<td>.19</td>
<td>.05</td>
<td>.32</td>
<td>.03</td>
</tr>
<tr>
<td>Junior</td>
<td>-.43*</td>
<td>.17</td>
<td>-.21</td>
<td>-.42*</td>
<td>-.21</td>
<td>-.39*</td>
<td>.16</td>
<td>-.19</td>
<td>-.40*</td>
<td>.17</td>
<td>-.20</td>
</tr>
<tr>
<td>Fifth-Year</td>
<td>-.25</td>
<td>.32</td>
<td>-.07</td>
<td>-.31</td>
<td>-.08</td>
<td>-.37</td>
<td>.30</td>
<td>-.10</td>
<td>-.38</td>
<td>.30</td>
<td>-.10</td>
</tr>
<tr>
<td>PDE Scale</td>
<td>.30***</td>
<td>.08</td>
<td>.30</td>
<td>.26***</td>
<td>.08</td>
<td>.26</td>
<td>.24*</td>
<td>.12</td>
<td>.24</td>
<td>.28**</td>
<td>.09</td>
</tr>
<tr>
<td>Athletic Identity Scale</td>
<td>.28**</td>
<td>.09</td>
<td>.28</td>
<td>.28**</td>
<td>.09</td>
<td>.28</td>
<td>.09</td>
<td>.28</td>
<td>.09</td>
<td>.28</td>
<td>.09</td>
</tr>
<tr>
<td>Athlete</td>
<td>-.10</td>
<td>.17</td>
<td>-.05</td>
<td>-.10</td>
<td>.17</td>
<td>-.05</td>
<td>-.10</td>
<td>.17</td>
<td>-.05</td>
<td>.05</td>
<td>.16</td>
</tr>
</tbody>
</table>

**Note.** Race variables (i.e., White, Black, Hispanic) contrast category = Other; School (i.e., SOB, ARTS, CHSS, CEHS) contrast category = The College of Science & Mathematics (CSM); Year in College (i.e., Junior, Fifth-Year) contrast category = Senior Status; Athletic (i.e., college student athlete versus CSNA) contrast category = CSNA; PDE x Athlete term created by multiplying athlete vs. non-athlete status and PDE. Reference categories and subsequent regression models include z-scores. * = p<.05, ** = p<.01, *** = p<.001.
By utilizing the same regression approach for the Model 1 equation, Model 2 added PDE to the regression equation to determine the relationship between PDE and CDMSE among college students. A statistically significant and positive relationship was found between PDE and CDMSE ($b = .30, t = 3.748, p < .001$). The positive coefficient suggests that as PDE increases, CDMSE also increases, net of the statistical controls (ethnicity, gender, major, and year in college). One demographic variable, junior status, was again significantly related to the dependent variable ($b = -.42, t = -2.50, p < .05$), meaning that juniors had lower levels of CDMSE compared to seniors and fifth-year seniors when utilizing PDE to predict CDMSE. An examination of the standardized beta coefficients as a measure of effect size suggests that among the two statistically significant predictors, it is PDE that has the strongest impact on CDMSE ($\beta = .30$), followed by junior status ($\beta = -.21$). These results provide support for the first research hypothesis which stated that there would be an association between PDE and CDMSE.

Model 3 added the athletic identity scale and athletic status (i.e., either being a college student athlete or CSNA) to the regression equation to determine if there was a significant relationship among PDE and CDMSE while controlling for athletic identity among college students. Athletic student status (i.e., either being a college athletic student or CSNA) was a statistically non-significant predictor of CDMSE ($b = -.10, t = -.61, p > .05$), but athletic identity was a significant predictor of CDMSE ($b = .278, t = 3.110, p < .01$). As athletic identity increased in value, CDMSE also increased in value. Junior status was again a significant predictor of CDMSE ($b = -.39, t = -2.416, p < .05$), meaning that juniors again had lower levels of CDMSE than seniors and fifth-year
seniors. A statistically significant relationship was again found between PDE and CDMSE ($b = .26, t = 3.307, p < .05$). These results again suggest that as PDE increases, CDMSE also increases, net of the statistical controls. An examination of the standardized beta coefficients as a measure of effect size suggests that among the three statistically significant predictors, it is athletic identity that has the strongest impact on CDMSE ($\beta = .28$), followed by PDE ($\beta = .26$), and junior status ($\beta = -.19$), where the negative coefficient for junior status demonstrates an inverse relationship. These results provide support for the second research question which stated that there would be an association between PDE and CDMSE when controlling for athletic identity.

Model 4 added the interaction between athletic status and PDE to the regression equation to determine if the relationship between PDE and CDMSE was moderated by athletic status (i.e., being a college student athlete or CSNA). The interaction term was created by multiplying athlete vs. non-athlete status and PDE. It is the case that the interaction term was included in part for theoretical reasons discussed in the literature review, but also in part because of the statistically significant correlation between athletic identity and CDMSE. The interaction term was statistically non-significant ($b = .05, t = .301, p > .05$). This result suggests that there is no significant difference between Division III college student athletes and CSNA in the relationship between PDE and CDMSE. A statistically significant and inverse relationship was again found between junior status and CDMSE ($b = -.40, t = -.225, p < .05$), between PDE and CDMSE ($b = .24, t = 2.04, p < .05$), and between athletic identity and CDMSE ($b = .28, t = 3.12, p < .01$). An examination of the standardized beta coefficients as a measure of effect size
suggests that among the three statistically significant predictors, it is athletic identity that has the strongest impact on CDMSE ($\beta = .28$), followed by PDE ($\beta = .24$) and junior status ($\beta = -.20$). These findings lie at odds with the research hypothesis that stated there would be a significant difference between athletes and CSNA in the association between PDE and CDMSE when controlling for athletic identity. That is, there is no support from the data for the notion that there would be a difference between athletes and CSNA in the data.

**Chapter Summary**

Presented in chapter four are the overall results of the three research questions, which include tables for visual presentation of the statistical information. The descriptive statistics and correlations among key variables were provided, and all statistically significant relationships were shown in the correlations and regressions. The results of the multiple regression analyses showed support for the first and second research hypotheses. No support was found from the data for the third research hypothesis.

Chapter five will include a discussion of the results and suggest potential reasons for the aforementioned results. Also, in chapter five I will discuss considerations of the results from this study’s theoretical framework (i.e., Chickering’s Identity Developmental Theory). Implications for counselors working with college students and college student athletes and career development process will be provided. Implications for future research will be discussed and the limitations of this dissertation study will be shared.
Chapter 5: Discussion

In this study, I examined several factors that potentially impact the career development experiences of Division III college student athletes and CSNA. The results of this research were drawn from a sample of 156 college students at a Division III university in the northeast region of the United States. This sample consisted of an almost even split of college student athletes (N=80) and CSNA (N=76). The research design was based on three questions that were posed in chapter one concerning differences and/or similarities between college student athletes and CSNA with respect to the relationship between professional development engagement (PDE) and career decision-making self-efficacy (CDMSE), as well as the possible moderating impact of athletic identity on this relationship. The investigation was grounded in identity development theory as articulated by Chickering (1963).

Several hypotheses guided the analysis of the research questions. The first hypothesis was that there would be a significant relationship between PDE and CDMSE among college students, and the second hypothesis was that there would be a significant relationship between PDE and CDMSE among college students while controlling for athletic identity. The third and final hypothesis was that there would be a significant difference between athletes and CSNA in the association between PDE and CDMSE when controlling for athletic identity in athletes versus CSNA. That is to say, it was hypothesized that being an athlete would moderate the relationship between PDE and CDMSE, controlling for athletic identity.

A multiple regression analysis was used to investigate the tenets of the first
research question examining the relationship between PDE and CDMSE among college students. To answer the second research question and determine if there was a statistically significant relationship between the predictor variable of PDE and the dependent variable of CDMSE while controlling for athletic identity, a second multiple regression equation including athletic identity as a statistical covariate was added. A third multiple linear regression equation was also used to investigate the third research question. This third equation was identical to the equation used to answer the second research question, except the procedure included adding athletic status as a moderator variable (athletes vs. CSNA) to determine if athletic status moderated the aforementioned relationship between PDE and CDMSE when controlling for athletic identity. In order to model the moderating effect of athletic status, an interaction term was created by multiplying athletic status and PDE.

In this final chapter of the dissertation, I provide a discussion of the results of this research study and situate these findings within the existing literature. I also discuss how the findings from this study relate to Chickering’s (1969) Identity Developmental Theory. Limitations of this study are relevant to the findings and are presented. Implications for those working with college students and student athletes based on these findings are provided, along with several suggestions for future research.

**Discussion**

The results associated with the first research question showed that there was a statistically significant relationship between PDE and CDMSE among college students. In this study, the more PDE a college student participated in, the higher their CDMSE.
This result aligns with the work of Paulsen and Betz (2004), who found that the higher the CDMSE reported by college students, the greater their confidence in their career goal selection, occupational clarity, and career planning. Furthermore, previous research into PDE confirmed that components of PDE are crucial pieces of the career development process for college students (Reason, 2009). The relationship between PDE and CDMSE discovered in this study also aligns with the tenets of Chickering’s identity developmental model. Chickering suggests that increased interactions and participation with social, peer, and vocational groups will assist college students with their identity as it relates to their career (Chickering & Reisser, 1993).

Interestingly, juniors were found to have lower levels of CDMSE than seniors and fifth year seniors. This latter finding suggests that as a student gets closer to obtaining a degree (i.e., transition from junior to senior status), their CDMSE increases. The finding that the demographic variable had a statistically significant relationship to CDMSE (i.e., junior status) can also be explained by the tenets of Chickering’s identity development model. Chickering found that as college students grow closer to obtaining a degree, they tend to see an uptick in their levels of career decision. More specifically, the finding concerning junior status aligns with two of Chickering’s vectors (Developing Autonomy and Establishing Identity), both of which suggests that junior level students tend to be less concerned with forming a career identity than a college student in his or her senior year (Chickering & Reisser, 1993). This difference also fits with the notion of career development programs at universities, as one would expect CDMSE to rise as students are potentially exposed to more career development opportunities during their senior
year. Additionally, as students grow closer to the end of their college years, the focus to plan and prepare for post-secondary plans (i.e. career) may become more important. Indeed, students who are nearing the end of their college career may feel an increase in pressure to focus on their career plans, which might cause students to ‘kick in to high gear’ their career development.

Results associated with the second research question suggest that a college student’s level of athletic identity impacts CDMSE even when accounting for the impact of PDE on CDMSE. Specifically, within this sample, as a student’s athletic identity increased, their level of CDMSE also increased, even when accounting for the impact of PDE. This means that students in this study who had a greater investment in their athletic identity also tended to have higher levels of CDMSE, which was an interesting, and somewhat surprising, result.

Although there are conflicting results in previous literature, (Coakley, 2009; Brewer, Van Raalte, & Linder, 1993; Fogarty and McGregor-Bayne, 2008; Stankovich et al., 2001) the relationship between athletic identity and CDMSE can be explained somewhat via the extant literature, as these results align with previous work by Settlers, Sellers, and Dramas (2002) that suggests increased levels of athletic identity will be associated with increased levels of CDMSE. Work by Coakley (2009) also aligns with these results, as his research reported that individuals with increased levels of athletic identity tend to have strong leadership skills, be goal oriented, and have greater levels of self-confidence. These characteristics are not indicative of CDMSE per se, yet these traits are personality characteristics that can contribute to achievement in many aspects of
a college student’s life, including career development (Coakley, 2009). It is also the case that many athletes engage in activities within their daily routine that lead to a healthy lifestyle by engaging in proper nutrition, proper sleep, and proper exercise (Settles et al., 2002). Once again, these are characteristics that, although they tend to be associated with athletic identity, nevertheless will generally help an individual to be more focused and successful when it comes time to making career decisions. The finding concerning how increasing levels of athletic identity will lead to increasing levels of CDMSE also aligns with Chickering’s vector 1, Developing Competency. This vector notes the importance of a college student demonstrating advances in nutrition, exercise, and other wellness concepts as a way to enhance career competence (Chickering & Reisser, 1993).

The third research question looked at the relationship between PDE and CDMSE while adjusting for athletic identity in athletes vs. CSNA. This research question accomplished this by adding a variable that accounted for athletic status (i.e., CNSA vs. college student athlete) to the regression equation. A moderator variable (PDE multiplied by athlete status) was also computed and added to the regression equation as a way to determine whether or not being an athlete moderated the relationship between PDE and CDMSE. The results suggest that there was no significant difference in CDMSE levels of CSNA vs. college student athletes. The results also suggest that there was also no moderation of the relationship between PDE and CDMSE as a function of CSNA vs. college student athlete. This means that whether a student was a Division III student athlete or CSNA did not impact the relationship between PDE and CDMSE, even when controlling for athletic identity. As a result, the third research question was not supported.
This finding does align with some previous research that had suggested there is no significant difference between college athletes and CSNA regarding their levels career decision making self-efficacy regarding the career development process (Brown, Glastetter-Fender, & Shelton, 2000; Brown & Hartley, 1988; Martens & Cox, 2000). However, it is important to recognize that previous research did not take into account athletic identity among college students, as this current research did. Furthermore, there is no locatable prior research that speaks to the potential moderating impact that CSNA vs. college student athlete status might have on the relationship between PDE and CDMSE. Although a moderation effect was hypothesized, it is possible that an effect was not detected because the current study utilized student athletes at a Division III school. To date, no locatable work has examined only Division III student athletes, with respect to their PDE and CDMSE. That said, there is some prior work (Cantor & Prentice, 1996; Greer & Robinson, 2006; Griffith & Johnson, 2002; Heuser & Grey, 2009; Parham, 1993; Potuto & O'Halon, 2007; Richards & Aries, 1999; Schroeder, 2000; Watt & Moore, 2001) which speaks to the differences between Division I and Division III college student athletes, especially as it relates to college student career development. Although speculative, this line of research does suggest that a moderation effect may be detectable in any investigation that includes both Division I and Division III college student athletes, as the inclusion of more types of athletes may help to bring this relationship into sharper repose.

The overall results of this research suggest that there is a positive relationship
between PDE and CDMSE among college students, even when controlling for athletic identity and the moderating effect of CSNA vs. college student athlete status. Additionally, higher levels of athletic identity were also found to lead to higher levels of CDMSE. Athletic status does not appear to moderate the relationship between CDMSE and PDE. In other words, whether a student is a Division III student athlete or a non-athlete does not significantly affect the relationship between PDE and CDMSE.

**Implications**

The findings of the current study have several implications for professionals working with college students. There are also numerous practical implications for student affairs professionals (e.g., career counselors, academic advisors) and high school counselors working to help students increase their CDMSE. In addition, there are teaching implications for counselor educators who work with student affairs and school counselors in training. Effect sizes within the regression modeling and correlational results were low to moderate among the statistically significant findings. As such, is also important for professional counselors to be cautious with respect to any and all implications listed below.

**Implications for Student Affairs Professionals**

The current research confirmed that the more PDE a student experiences, the greater the CDMSE that student will have. The findings from the current research align with the work of previous researchers who found that there is a need to increase professional development-related experiences and career development among college students (Foubert & Grainger, 2006; Morrow & Ackerman, 2012). Student affairs
professionals in higher education work in various areas of the university by providing a comprehensive set of out-of-classroom student services and programs (Paris, 2002). Some specific examples of student affairs services include (but are not limited to) career services, study abroad programs, community service learning, disability services, counseling services, and academic advising. Practitioners in these varied branches of the university endeavor to help empower students to focus more successfully on their studies, as well as enhance their personal growth and maturation both cognitively and emotionally. Student affairs professionals play crucial roles on campus in providing additional educational services to increase student growth (Paris, 2002).

Student affairs practitioners can work to ensure that professional development engagement (PDE) is provided to every student throughout the undergraduate population. The current research results determined no significant difference between athletes and non-athletes related to PDE and levels of CDMSE. Therefore, all students should be provided the same opportunities to be exposed to PDE experiences, as neither of these groups is more or less “at risk” of low CDMSE. For instance, the majority of students majoring in education across colleges/universities are required to participate in a student teaching experience for a set length of time (typically a semester or an academic year). Requiring (or strongly encouraging) similar career-related experience for all students might help increase their career decision-making self-efficacy. Examples might include international business majors studying abroad and/or hotel and restaurant management majors interning at a hotel or restaurant and taking food etiquette workshops.

Student affairs professionals work in various capacities where they are able to
provide PDE services (e.g., International Studies/Global Studies professionals who provide study abroad programs). Collaborating with deans of schools or department chairpersons to encourage ways to make PDE a requirement for all students would help ensure that all students receive some type of career-related experience in practice (Swanson & Tomkovich, 2012). Furthermore, in order to provide college students with exposure to careers and various PDE experiences, college career counselors can provide career fairs on college campuses. The career fairs potentially would provide college students with an introduction to different types of jobs and/or PDE opportunities available to them (e.g., internships). Career fairs also may assist students in making connections with professionals in certain career fields and understand more about the roles and expectations within their career of interest (Betz & Voyten, 1997; Swanson & Tomkovich, 2012).

College counselors also should provide individual sessions and workshops for students on various PDE skills (e.g., interviewing, proper professional etiquette, and resume design). Previous researchers have found that various PDE-skills are all “crucial pieces” to the career development process (Reason, 2009). Many colleges are requiring these types of services already; however, this current research reinforces the necessity for PDE skills trainings to be provided for all college students across colleges/universities.

Through workshops, career counselors are able to provide students with information about how to create a professional cover letter and resume according to their particular profession, which helps to prepare students for internships, externships, study abroad, and job opportunities, to name a few. Additionally, career counselors could
cover these topics via individualized meetings with students to personalize the discussion with specific suggestions of ways for a student to create a cover letter, resume, and/or interview skills tailored specifically to meet each student’s needs.

By way of individual meetings, career counselors are able to provide role-play opportunities for the college students to meet the specifically career-focused need. These role-play experiences will demonstrate a real-life situation where a student may be interviewed or could include an exercise where the student is presenting a resume for review. Additionally, the career counselor may be able to offer specific guidance as to which forms of PDE would be most appropriate for the individual student’s career path. For instance, for an individual majoring in International Business, it may be appropriate for the career counselor to encourage the student to seek study abroad opportunities for language and culture immersion.

As student affairs professionals play an important role in the CDMSE of college students, and as the results of this research project confirms the impact of PDE on CDMSE, it would be beneficial for student affairs professionals from various parts of the university to collaborate on partnerships. For instance, it may make sense for career services to offer a career fair that highlights various types of employment opportunities to college students. Additionally, this career fair may involve multiple student affairs programs and have advertising for and learning opportunities regarding study abroad, internships/externships, and volunteer programs. Similarly, if the career services center is hosting a workshop on resume building and cover letter writing, they might consider partnering with disability services and providing specific individual sessions for these
students that will meet their disabilities needs. These cooperative opportunities for college students to easily learn about potential PDE experiences could provide an optimum and time efficient way of infusing PDE into their college career-related experience (Conner, Daugherty, & Gilmore, 2013; Nota, Soresi, & Zimmerman, 2004). Additionally, student affairs counselors should be cognizant of junior students’ lower levels of CDMSE when compared with senior students. As such, these counselors should work to target this year in college and ensure students have opportunities to have individual and/or group presentation opportunities to work through the career decision-making process.

Junior status was the only demographic variable found to have a significant (albeit inverse) relationship to CDMSE when controlling for PDE and athletic identity. This suggests that junior students have lower levels of CDMSE than seniors and fifth-year seniors. Therefore, this population should be targeted in terms of making sure they are provided specific PDE opportunities prior to and during their junior year in college. Similarly, career counselors should make a point to provide information on PDE opportunities in workshop or large group settings with junior level students prior to their senior year to support them in determining what types of PDE are available to support them in their career interests. That said, it should be noted that this would be challenging to do at larger schools. As such, it may be advisable for larger schools to invest in a ‘train the trainer’ program as a way of increasing the number of available personnel to assist with PDE opportunities and workshops.

Implications for student affairs professionals regarding the results are also
important to note. Given the lack of differences between CSNA and athletes on CDMSE, student affairs counselors are encouraged to dispel any pre-conceived notions they might have about college athletes or CSNAs who are highly athletic regarding their career decision making. For example, career counselors should not make assumptions about the levels of CDMSE among athletes (or non-athletes) as it relates to student interest in major/degree, PDE, and the career decision-making process. According to this research, both CSNA and student athletes demonstrate similar levels of PDE and CDMSE, and as such, the expectations of student affairs professionals concerning the career decision making-making process should not differ for either population, solely based on their athletic status.

**Implications for High School Counselors**

The outcomes from the current study also have modest implications for high school counselors, most notably with college-seeking seniors. The current findings suggest that involvement in PDE experiences leads to greater CDMSE among college students, and therefore, students may benefit from attending a college/university with established PDE programs. As such, high school counselors should educate themselves on what types of PDE programs are available at various colleges/universities, and to what level different types of PDE experiences are being provided and/or made available to students (or possibly required). Through college admission visitations and counseling conferences, high school counselors can investigate information specific to college students and PDE at various campuses.

Additionally, understanding what majors/programs require PDE experiences as
part of the curriculum is crucial information. Similarly, discovering when (i.e., year in college and time of year) PDE is introduced to students and what capacity (e.g., individual meetings with academic advisor, classroom, and informational sessions) would be helpful knowledge for high school counselors. Collaboratively working with other counselors within the same district, region, or through professional networking, high school counselors can create a database of the information collected at colleges/universities regarding PDE. This information can be utilized as a reference guide for counselors and for prospective college students as students work through the college search process. High school counselors should also work with prospective college students to provide guidance as to how to research the types of PDE programs being supported and/or recognized at various colleges/universities.

The types of research include identifying the PDE components that may be the most beneficial to a college student’s career decision-making. Once these key identifiers are determined, the high school counselor can collaborate with students to investigate the PDE opportunities at a college. The investigative tools include utilizing the collaborative counselor database (if available), researching the college websites, attending information sessions, and attending both campus tours and meeting with admission counselors (Wendlandt & Rochlen, 2008; Wessel, Christian, & Hoff, 2003). Additionally, while on campus tours and/or at meetings with an admission counselor, it would be important for the student to inquire about PDE specific components identified as personal preferences. Visiting career service centers, study abroad programs, and other campus offices that offer PDE experiences may provide specific insight to the level of PDE that exists within
a campus.

**Implications for Counselor Educators**

These research findings have implications for counselor educators working with future student affairs counselors. Counselor educators should infuse discussion of PDE into specialization courses specific to Higher Education students (e.g., Student Services in Higher Education). Students taking these courses should explore the meaning of PDE as it relates to career decision making, understand the various types of PDE, and the importance of the practice of PDE for career development.

Counselor educators are encouraged to educate student affairs students on PDE through multiple forms of instruction. Through published articles related to forms of PDE and college students, prospective counselors will learn what type of research exists related to components of this construct and the positive outcomes of PDE behavior. Similarly, a panel discussion by current college students from different career areas who share their experience, perspective, and feedback of PDE could provide prospective counselors with more practical and relatable understanding of PDE’s role in their career development. Additionally, the panel discussion may afford an opportunity for prospective counselors to ask undergraduate students specific questions related to PDE. Case studies involving undergraduate students struggling to make a career decision and looking for career decision-making guidance could provide prospective counselors an opportunity to work individually or in small groups using role-play. This could be done by a counselor who is mentoring a student, as a way to learn how to provide counsel and guidance to an undergraduate student. Working through career decisions in search of
career decision-making advisement should be a classroom project for prospective counselors.

Additionally, counselor educators could require prospective student affairs counselors to observe or directly engage in PDE with undergraduate students. For instance, a prospective counselor could spend a morning at the career services center observing the resume building and review process. Or, they might shadow an undergraduate student as they spend a day participating in their internship experience. Counselor educators could then have the counselors in training reflect on their experience and share their thoughts, assumptions, and feedback with the class or in a reaction paper.

Counselor educators should also consider using the results of this research project as a component of a Lifespan and Development course as it relates to career and self-efficacy, in particular within the emerging adulthood population. Although this particular research focused on college-aged students, the concepts of career development (CDMSE), athletic identity, and PDE are relevant within many different populations (e.g., high school students) and extend into emerging adulthood (e.g., for non-traditional college-age students; career changes; return to work following a period of childcare). By understanding the importance of PDE and how this behavior relates to CDMSE, counselor educators will be better able to educate prospective counselors within a Lifespan and Development course about the impact that PDE has on CDMSE. Furthermore, emerging adulthood intersects with the emerging amount of career self-efficacy displayed by students. These PDE opportunities can therefore be used in the Lifespan and Development course as a way of developing career self-efficacy to
individuals within the stage of emerging adulthood.

**Limitations**

There are several limitations to consider while making inferences about the results. First, the data collected was from 156 college students (80 student athletes; 76 students who are not athletes) who were at one Division III school in the northeastern region of the United States. Results may have varied if the researcher had sampled from additional Division III universities. Although the results have generalizability to other Division III universities, broad generalization should be done with caution given the single-school nature of the sample. Nevertheless, this study should serve as a helpful starting point for researchers interested in the relationship between PDE, athletic identity, and the CDMSE of college students who are not athletes, as well as college student athletes.

Secondly, due to the time of year when this data was collected (i.e., the spring semester), there were certain types of sports (e.g. track and field, lacrosse) that were still in season, while others had concluded their seasons for the school year (e.g., soccer and football). As such, there may be under-representation of student athletes from certain varsity sports, as the student athletes that were currently in-season and practicing were the individuals who were studied. Furthermore, coaches were informed by the athletic director and instructed by the researcher to share information with their team about attending a meeting session to hear from the researcher about participating in the study. If coaches did not share this information with team members, those athletes were not aware of the study, and as a result, could not opt to participate. This may have reduced
the overall sample size, and by extension, cut down on the possibility of detecting statistically significant effects within the data due to lower overall statistical power.

Third, non-athlete college students were introduced to the study only if their professor supported the researcher visiting their classroom to discuss the research during spring semester. This limited the sample to participants enrolled in specific classes as a function of the convenience sampling of faculty who agreed to open their classes to participation. Also, there may be an under-representation from students engaging in PDE, because they are more likely to be off-campus engaged in those activities versus in these courses on any given day.

There was a large amount of variance among CSNA regarding their academic areas of interest (College of Humanities and Social Sciences (n=53; 34.0%), College of Education and Human Services second (n=49; 31.4%), School of Business (n=27; 17.3%), College of Arts (n=14; 9.0%). Although this provided a broader cross-section of students across the university than a single College would elicit, there is not equal representation across Colleges, nor were specific majors examined for possible themes/patterns.

There is the possibility of instrumentation error. The *Professional Development Engagement Scale* (*PDES*; Blau & Snell, 2012) is a newer instrument developed to measure career related experiences that engage students inside and outside of college programs and experiences. As mentioned in chapter three, the *PDES* has only been used to measure small samples since its initial development. Also, the *PDES* has only been utilized to measure PDE experiences among college students’ at large universities, and
not among college student athletes in mid-sized or smaller schools. As such, it is difficult to determine if this measurement tool offers the optimal measurement of professional development engagement among college students. Finally, there is the limitation of self-report data, which should also be taken into account when considering the results.

**Future Research**

Further examination is needed to investigate additional ways to increase CDSME for college students and college student athletes. Results from this study suggest that athletic identity increases CDMSE, net of the relationship between PDE and CDMSE. The findings in the literature, as well as the findings of the current study, suggest that further research is needed to clarify the relationship between athletic identity and CDMSE.

As previous researchers have suggested, individuals with higher levels of athletic identity also have reported specific positive and driven characteristics (Coakley, 2009; Settles, Sellers, & Dramas, 2002). Future research needs to examine if these components in isolation have an impact on CDMSE. Furthermore, to date there is no locatable research that focuses exclusively on college student non-athletes and whether their athletic identity (or lack thereof) may impact their CDMSE. An investigation of whether the components of athletic identity, both in college student athlete populations and CSNA populations, impact CDMSE could provide clarity to the results of the association between athletic identity and CDMSE in this current research project.

Additionally, more research is needed concerning the construct of professional development engagement. PDE is a relatively new construct in the literature (Blau &
Snell, 2012); that said, previous researchers reported that components of professional development are crucial in the career development process for college students (e.g., Betz & Voyten, 1997; Nota, Soresi, & Zimmerman, 2004; Swanson & Tomkovich, 2012; Komarraju, Swanson, & Nadler, 2014). Thus, further research is suggested to investigate what (or if any) specific components of PDE increase and/or decrease CDMSE.

Furthermore, additional research on how to best measure PDE quantitatively may add validity and reliability to the current PDES, or possibly even suggest the need to create another PDE instrument that was not designed for use at a particular university. The limited amount research pertaining to components of PDE also suggests that there are possibly other variables to investigate regarding ways to increase CDMSE for college students and college student athletes.

The only demographic variable that had a statistically significant relationship to CDMSE was junior vs. senior status of college students. The results suggested that junior students had lower levels of CDMSE. Future research should investigate whether this trend holds when accounting for freshman, sophomore, junior, senior, and fifth year status students, as the current investigation did not include freshmen and sophomores. This suggestion for future research would expand on findings by Conner, Daugherty, and Gilmore (2013), as their research suggested that younger college student athletes and CSNA (freshman and sophomores in particular) reported entering into college with higher levels of athletic identity and less focus on academic priorities. Throughout college, regardless of the Division level, students reported shifting their focus from athletic identity to an academic/career focus or establishing a balance between both
athletics and academics (Connor et al., 2013). The results of this previous research concluded that underclassmen students reported less interest in career activities and higher levels of athletic identity. It may be the case that this relationship in underclassmen persists and is still present within the junior year of college. As such, future research should examine a larger and more diverse sample representative of the entire college population (i.e., freshmen through seniors) in order to garner additional information regarding how academic level in college may affect CDMSE. Likewise, further researchers could examine CDMSE and PDE among younger student athletes (i.e., high school students) and whether aspects of their identity (athletic, student, etc.) relate to their post-high school career plans.

One surprising result was the lack of a significant difference between college athletes and CSNA with regard to the relationship between PDE and CDMSE when controlling for athletic identity. Additional research is suggested to investigate why the relationship between PDE and CDMSE was not significantly moderated by athletic status. One possibility for the lack of a moderation effect could be that the current study used students who are enrolled at a Division III school. A comparison between Division III vs. Division I (and/or Division II) students may provide additional clues as to how athletic status may (or may not) moderate the relationship between PDE and CDMSE. While other researchers have published studies concerning college student athletes and their career development, no prior work has focused exclusively on the experiences of Division III student athletes around these specific constructs. That said, these prior works do suggest there are some differences between Division I and Division III student
athletes concerning career development (Griffith & Johnson, 2002; Heuser & Grey, 2009; Richards & Aries, 1999; Schroeder, 2000). Also, the majority of previous research related to athletic identity, career decision-making and/or career development has sampled populations of Division I student athletes (Cantor & Prentice, 1996; Greer & Robinson, 2006; Parham, 1993; Potuto & O'Halon, 2007; Watt & Moore, 2001). Scant published research exists on student-athletes at Division III institutions. The current research provides results suggesting there may be a significant difference between athletic identity and career decision-making self-efficacy for Division III student athletes compared to Division I. Until additional similar studies are conducted, it is difficult to elevate the results of any one study. It is also important to remember that the relationships found in this study are not causal, and as such, studies with more causally constructed research designs would be substantial contributions to the literature in this area.

Conclusion

In this dissertation, I examined the relationship between Professional Development Engagement (PDE) and Career Decision-Making Self Efficacy (CDMSE) among college student athletes and CSNA while controlling for athletic identity. I also looked to determine if the relationship between PDE and CDMSE was moderated by athletic status (i.e., athlete versus non-athlete) while controlling for athletic identity. The most noteworthy findings from this study were the significant positive relationship between PDE and CDMSE within both CSNA and college student athlete populations, even while accounting for athletic identity. Additionally, there was evidence to show that
regardless of athletic status, the relationship between PDE and CDMSE remained positive. Although the results of this research study did not support all of my original hypotheses, it was nevertheless the case that PDE and athletic identity both serve to increase CDMSE.

The more literature that is written and data that is focused on student athletes and career development, the more knowledgeable professional counselors and college coaches will become about the importance of career development within the college student population. Also, the results of the current project brought awareness to the role of professional development engagement in boosting career self-efficacy. It is hoped that future researchers will continue to broaden and strengthen the literature in this area as a way to gain a richer understanding of how professional development relates to career decision-making for college student athletes and college students who are not athletes. The ultimate goal of this project was to offer knowledge of the relationship between PDE and CDMSE, as well as suggestions of programs that will help to meet the career developmental needs for college student athletes so that when they conclude their student and athletic careers, they are prepared for the next stage of their life.
References


Deferring to the previously extracted content.
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National Collegiate Athletic Association (2014).


and the CDSE-Short Form The Ohio State University, Columbus OH (2006).


The National Career Development Association (2014)

http://www.ncda.org/aws/NCDA/pt/sp/home_page


APPENDIX A

Athletic Identity Measurement Scale (AIMS)

<table>
<thead>
<tr>
<th>Instructions: For the next 10 questions, please circle the number that corresponds most closely to your personal thoughts, feelings, and experiences. For each item indicate on a scale from (1) strongly disagree to, (7) strongly agree. Please circle only one response (number) per item.</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I consider myself an athlete.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I have many goals related to sport.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Most of my friends are athletes.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sport is the most important part of my life.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I spend more time thinking about sport than anything else.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I need to participate in sport to feel good about myself.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Other people see me mainly as an athlete.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I feel bad about myself when I do poorly in sport.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sport is the only important thing in my life.</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>I would be very depressed if I were injured and could not compete in sport.</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
APPENDIX B

Career Decision Self-Efficacy Short Form (CDSE-SF)

Instructions: For each statement below, please read carefully and indicate how much confidence you feel you have to accomplish each of these tasks by circling the appropriate number under the question, using the answer key below. Scale (1) No Confidences to, (5) Complete Confidence

<table>
<thead>
<tr>
<th>Statement</th>
<th>No Confidence</th>
<th>Confident</th>
<th>Complete Confidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>I can find information in the library about occupations I am interested in.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can select one college major from a list of potential majors I’m considering.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can make a plan of my goals for the next five years.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know what steps to take if I am having academic trouble with an aspect of my chosen career.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can accurately assess my abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can select one occupation from a list of potential occupations I am considering.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know what steps I need to take to successfully complete my chosen major.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I persistently work at my major or career goal even when I get frustrated.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know what my ideal job would be.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can find out the employment trends for my occupation over the next ten years.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know how to choose a career that will fit my preferred lifestyle.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know how to prepare a good resume.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I will chose majors if I do not like my first choice.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know what I value most in an occupation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can find out about the average yearly earnings of people in an occupation.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can make a career decision and then not worry about whether it was right or wrong.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I will change occupations if I am not satisfied with the one I enter.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know who I am; and am ready to do what it takes to achieve my career goals.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can talk to a person already employed in the field I am interested in.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know how to choose a major or career that will fit my interests.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can identify employers, firms, and institutions relevant to my career possibilities.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can identify the type of lifestyle I would like to live.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>No Confidence</td>
<td>Confident</td>
<td>Complete Confidence</td>
</tr>
<tr>
<td>------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------</td>
<td>---------------------</td>
</tr>
<tr>
<td>I know how to find out about college or professional schools.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I know how to successfully manage the job interview process.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>I can identify some reasonable major or career alternatives if I am unable to get my first choice.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
APPENDIX C

Professional Development Engagement (PDE) Scale

Response scale, 0= Did not participate, 1= Strongly disagree, 2= disagree, 3= slightly disagree, 4= slightly agree, 5= agree, 6= strongly agree

Instructions: For each statement below, please read carefully and indicate on a scale from (1) strongly disagree to, (6) strongly agree how each activity contributed toward your career development. If you have never participated in an activity, select “Did not participate (NP)” Please select only one response (number) per item.

<table>
<thead>
<tr>
<th>Activity</th>
<th>NP</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-required workshops and/or seminars (business etiquette, job search strategies, etc.)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Multiple resume critiques, including employer resume critiques</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Attend College and Career Services for job/internship applications</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>On campus job recruiting (e.g. job fairs)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Professional Development activities through student professional organizations</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Participation in internships/externships</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Meet with a career counselor on campus</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Career related job experience</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Study abroad</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>College and Career online services</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
APPENDIX D

Demographic Information

Gender: Male, Female, Other

Ethnicity: White, Black/African American, Hispanic/Latino/a, Asian, American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, Other

Year in College: junior, senior, fifth-year

Academic Major:
APPENDIX E

Letter to Participate in Research Study

Dear Division III Student-Athlete and College Student Non-Athletes (CSNA),

You are invited to participate in a study on the relationship between NCAA Division III student athletes’ perceived level of athletic identity, level of career decision-making self-efficacy and professional development engagement. All Division III student-athletes and CSNA within the Montclair State University are eligible to participate in this doctoral dissertation study by a student at Montclair State University.

This study hopes to gather information on the relationship between NCAA Division III student-athletes level of athletic identity, level of career decision-making self-efficacy and professional development engagement as well as determine if there is a relationship between level of athletic identity, level of career decision-making self-efficacy and professional development engagement amongst college students who are not athletes. Athletic identity is defined as the amount of identity an individual refers to as an athlete; career decision-making self-efficacy, is defined as an individual’s degree of belief that he/she can successfully complete tasks necessary to making career decisions and professional development engagement, defined as the amount of external professional development behavior an individual participates and student-athletes. Also, this study hopes to determine if professional development engagement influences the relationship between levels of athletic identity and career decision-making self-efficacy in student-athletes. As a result, understanding the relationship between these variables may offer a better understanding of how to prepare Division III student-athletes for career development and life after college.

If you would like take part in this study, you would complete a brief, anonymous online survey that should take you about 20-25 minutes to complete. All survey responses will remain anonymous, secure, and confidential. Please click on the following link. We recommend that you take this survey on a private computer in a non-public setting to further protect your confidentiality. By clicking next, you are giving your consent to participate in this research study.: https://www.surveymonkey.com/s/YS6MJ6L

Any discomfort or inconvenience to you may include feeling uncomfortable responding to questions regarding your specific knowledge or experience as an athletic or non-athlete and your confidence in your career development. Data will be collected using the Internet. While there are no guarantees on the security of data sent on the Internet, we will maximize confidentiality by not collecting your name or college/university. If you decide to participate, you are free to stop at any time.

By clicking to the next page below, I confirm that I have read this form and will
participate in the project described. Its general purposes, the particulars of involvement, and possible risks and inconveniences have been explained to my satisfaction. I understand that I can discontinue participation at any time. My consent also indicates that I am 18 years of age or older.

Please feel free to ask questions regarding this study. You may contact me at janoskoal@montclair.edu or 570-872-7693 or you can contact my Faculty Advisor, Dr. Matthew Shurts, at shurtsm@montclair.edu if you have additional questions pertaining to this study.

Thank you for your time.

Sincerely,

Ashley E. Janosko, Doctoral Candidate
Montclair State University
Dept. of Counselor Education & Leadership

Please feel free to print a copy of this consent.
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