

**An Examination of the Student Engagement and Deep Learning Experiences of
High-Profile Student-Athletes, Low-Profile Student-Athletes, and the
General Student Population**

by

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ABSTRACT

Within the landscape of collegiate athletics, the personal development and engaging experiences of student-athletes, particularly those in high-profile sports, have often come into question. This study examined National Collegiate Athletics Association (NCAA) Division I first-year and senior high-profile student-athletes' engagement in college and compared those findings with that of low-profile student-athletes and the general student population. The research design involved a secondary analysis of data collected from first-year and senior students at NCAA Division I institutions that participated in the 2010 administration of the NSSE *College Student Report*. Stratified random sampling technique was used to assemble a representative sample of the three groups (high-profile, low-profile, and general student population). First-year ($n = 220$) and senior ($n = 173$) students were analyzed separately. A one-way multivariate analysis of variance (MANOVA) was conducted in order to determine the effect of the five Benchmarks of Effective Educational Practice (Level of Academic Challenge (*LAC*), Active and Collaborative Learning (*ACL*), Student-Faculty Interaction (*SFI*), Enriching Educational Experiences (*EEE*), and Supportive Campus Environment (*SCE*)), and the three Deep Learning Scales (Higher-Order Learning (*HL*), Integrative Learning (*IL*), Reflective Learning (*RL*)), on the three student groups.

For first-year students, the *SFI* benchmark was significantly different for the three student groups. For senior students, the benchmarks for *EEE*, *SCE*, and the deep learning approach *HL*, were significantly different for the three student groups. The findings suggested high-profile

first-year student-athletes discussed matters related to grades and assignments with their instructors more often than their non-athlete peers. Moreover, low-profile senior student-athletes reported greater satisfaction with the diversity of their learning opportunities and experiences compared to the other student groups. Though high-profile senior student-athletes responded more satisfied than the general student population with the institutional support they received, they reported that their coursework did not improve their critical thinking skills. The results from this study provide empirical data to inform practice and aid higher education administrators in understanding more about the unique engaging experiences and learning approaches of student-athletes.

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“For the Lord is good; His mercy *and* loving-kindness are everlasting,
His faithfulness [endures] to all generations.” Psalm 100:5 (AMP)

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CHAPTER I

INTRODUCTION

There exists a balancing act between the academic requirements and social demands of college that can be challenging for students. For traditional college-aged students (18-22), the undergraduate college experience includes more than time in the classroom, it also includes campus activities, involvement in organizations, and other social events. During college, students develop intellectual competence and gain an understanding of their values and personal philosophy of life (Astin, 1993).

Student engagement consists of involvement during college through interactions with faculty, collaboration with peers, and enriching developmental learning experiences in and out of the classroom. The literature related to student engagement and positive outcomes in college is extensive (Anaya, 2009; Astin, 1984; 1993; Carini, Kuh, Klein, 2006; Chickering & Gamson, 1987; Hu & Kuh, 2002, 2003; Pascarella & Terenzini, 1991, 2005; Tinto, 1987). The consensus from the research literature cited above concludes that what students do during their time in college matters and the more they engage in a subject or an experience, the more they typically learn from it. Engagement is two-fold, requiring effort on the part of the student as well as institutional support through policies and other activities to cultivate positive learning outcomes. George Kuh (2001) explains, “Without knowing how students spend their time, it’s almost impossible to link student learning outcomes to the educational activities and processes associated with them” (p. 15).

What is the college experience like for student-athletes and, more specifically, what is the experience for student-athletes in the high-profile sports of football, men’s and women’s

basketball, and baseball? Student-athletes represent a special population of students on college campuses, with unique challenges and needs when compared with their non-athlete peers (Gaston-Gayles, 2004; Gayles, 2009; Carodine, Almond, & Gratto, 2001; Watt & Moore, 2001). The added responsibilities and time constraints associated with the demands of intercollegiate sport participation (i.e. practice, workouts, competition, required study hall, travel, and physical rehabilitation), coupled with the academic and social expectations of college are all a part of the student-athlete journey through college (Carodine et al., 2001; Coumeaux & Harrison, 2011; Quaye & Harper, 2014; Simons, Van Rheen, & Covington, 1999). Much of the literature related to student-athlete engagement on campus suggested that student-athletes are just as, if not more, engaged as the general student population with campus activities and co-curricular experiences (Aires & Richard, 1999, Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Umbach, Palmer, Kuh, & Hannah, 2006; Williams, Sarraf, & Umbach, 2006).

The National Association of Collegiate Athletics (NCAA), the governing body of intercollegiate athletics, has enacted stringent recruiting and eligibility regulations over the past decade in response to growing concerns related student-athlete preparedness for college, academic rigor during college, and graduation rates (Comeaux & Harrison, 2011; Petr & McArdle, 2012). College sports have become increasingly more important in our society with the media attention of major college sporting events producing high streams of revenue and commercial exposure for university athletics programs. Student-athletes are readily praised and criticized as media attention and exposure places them under the public eye (Carodine et al., 2001). For top schools, the institution itself and all stakeholders benefit from the financial profits and national exposure that intercollegiate sports bring.

National scandals about “cheating, plagiarism, clustering of athletes in certain majors, and excessive use of independent study courses,” continue to headline the media (Southall, 2012, p. 2). The amateur model of collegiate athletics and the student-first mentality disbands as each new case comes to light. In a chapter written for *New Directions for Student Services* in 2001, Sherry Watt and James Moore explain,

As intercollegiate athletics become more and more commercial and are increasingly viewed as a form of mass entertainment, how can colleges and universities protect the integrity of their academic mission and the intellectual environment while allowing student-athletes to reap the benefits that both roles (student and athlete) provide? (p. 8)

The NCAA aims to balance the value of amateurism and the commercialization of collegiate athletics by implementing regulations to hold institutions accountable, providing student-athletes the resources needed to compete at an elite level and obtain a college degree. As the NCAA advertising campaign states, of over 460,000 student-athletes, more than 98 percent will “go pro” in something other than sports (NCAA, 2013; Palaima, 2011). If most student-athletes will graduate college and no longer continue their sport, what types of engaging learning experiences are they receiving while in college? This study examines that question and more.

Statement of Problem

In general, the benefits of college are accepted; however, in the past decade the academic and personal development of student-athletes has come into question (Comeaux & Harrison, 2011). Historically, the graduation rates for African American men participating in football and men’s basketball have been lower than student-athletes in other sports and the general student

population, which has been a cause of concern for institutions nationwide (Hyatt, 2003).

Scholars have conducted substantial research on student-athletes in order to better understand the variations in their successes and performance outcomes by evaluating purposeful engagement activities (Gayles & Hu, 2009; Umbach et al., 2006) and psychosocial/non-cognitive gains (Astin, 1993; Gayles, 2004; Hyatt, 2003; Simons, Van Reheenen, & Covington, 1999) in college. When controlling for the pre-college demographic characteristics of student-athletes, several studies indicated no difference in the effects of the college experience on student-athletes when compared to the general student population (Aires & Richard, 1999, Kuh, et al., 2006; Umbach et al., 2006; Williams et al., 2006). If student-athletes are as engaged in educationally purposeful activities as their non-athlete peers, why do media headlines continue to insinuate that they are getting short-changed in their college experiences?

The research designs of previous studies seeking to better understand student-athlete engagement and learning have used different variables such as sport type (Smallman & Sowa, 1996; Gayles & Hu, 2009; Coumeaux, Peer, Taustine, & Harrison, 2011), gender (Pascarella, Bohr, Nora, & Terenzini, 1995; Pascarella, Truckenmiller, Nora, Terenzini, Edison, & Hagedorn, 1999; Simons et al., 1999), academic success (Mayo, 1982; Cantor & Prentice, 1996; Aries & Richard, 1999; Aries, McCarthy, Salovey, & Banaji, 2004); career motivation (Sowa & Gressard, 1983; Kennedy & Dimick, 1987; Smallman and Sowa, 1996); identity (Prentice, 1997; Yopyk & Prentice, 2005; Stone, Harrison, & Mottley, 2012), and race (Smallman & Sowa, 1996; Stone, Harrison, & Mottley, 2012) to identify differences in the population. However, there is limited research evaluating student-athletes at different points in their college journeys from first year to senior year. According to Gayles (2004), further exploration of the engagement

experiences of student-athletes during college is necessary to evaluate the factors contributing to student-athlete success in college.

Moreover, student-athletes have been shown to graduate at higher rates than their non-athlete peers (NCAA, 2013). However, it is evident that there are much lower graduation rates for student-athletes in the high-profile revenue sports of football and men's basketball when compared with non-revenue student-athletes (Gayles & Hu, 2009; Southall, 2012). As the landscape of collegiate athletics continues to evolve, questions regarding the engaging experiences and personal development of student-athletes, particularly those in high-profile sports, during their time in college will continue.

Purpose of Study

The primary purpose of this study was to report on National Collegiate Athletics Association (NCAA) Division I first-year and senior high-profile student-athletes' engagement in college, both in and out of the classroom, and compare those findings with those of low-profile student-athletes and the general student population. The study focused on the importance of engagement in effective educational practices and deep learning approaches as measured by the National Survey of Student Engagement (NSSE). The study sought to identify the important differences in engagement experiences and deep learning for first-year and senior student-athletes in high-profile sports versus other student populations.

Research Questions

In this dissertation, the following research questions were examined:

RQ1: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ2: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

RQ3: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ4: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

Significance of Study

Only a few studies have been conducted to evaluate the effects of engagement in effective educational practices, as defined by the NSSE, on a student-athlete's college experience (Irons, 2014; Umbach et al., 2006; Williams et al., 2006). The NSSE defines student engagement in two areas; "the amount of time and effort students put into their studies and other educationally purposeful activities" and "how the institution deploys its resources and organizes the curriculum and other learning opportunities to get students to participate in activities that decades of research studies show are linked to student learning" (NSSE, 2013, n.d., para. 1).

Though the NSSE has been used in assessing the relationships between demographic factors (race, ethnicity, gender, etc.) and student type (student-athlete v. general student population), the results from this study, separating the first-year and senior student populations, will fill a gap in the existing research (Cruce & Laird, 2009). As a contribution to the research related to student-athletes cognitive readiness and development in college (Astin, 1993; Gayles & Hu, 2009, Pascarella, et al., 1999; Umbach et al., 2006), this study is unique in using the NSSE as an instrument to evaluate deep learning, particularly in NCAA Division I first-year and senior student-athletes.

The findings of this study will be of particular interest to those tasked with working with student-athletes as well as all higher education professionals, including student affairs educators and athletic department support personnel who work with this unique student population.

Assumptions of Study

This study was conducted based on the following assumptions:

1. The respondents provided both honest and accurate information when responding to the questions on the NSSE.
2. The NSSE is a valid and reliable instrument.
3. The NSSE can sufficiently measure engagement in effective educational practices and deep learning using survey items and subscales.
4. Students who noted they participated in an institutionally sponsored athletic team and who participated in a sport sanctioned by the NCAA, were indeed on an NCAA Division I athletic team.

Limitations

Limitations based on the research design and characteristics of the sample should be considered throughout the review of this study. First, since the data supplied by NSSE for this study excluded institutional identifiers, it was not possible to compare the results for students across institutions. Moreover, the participants in the survey chose to participate voluntarily, so it is not known how the characteristics of the sample may differ from those who chose not to participate. A continuing challenge to those who administer the NSSE annual survey is attaining student response rates high enough to ensure confidence that the results are stable and reliable (Kuh, 2001). Since the survey was administered to randomly selected first-year and senior students, and due to the voluntary nature of the survey, the characteristics of those randomly

selected that chose to participate may be different than those who did not receive the survey or chose not to participate. Furthermore, since secondary self-reported data was used, there was no way to check for honesty and accuracy of the survey responses.

Moreover, additional limitations arise from the sample size. Though stratified random sampling was used to create a sample proportionate to the student-athlete population, the results should be considered as preliminary and only suggestive of student-athlete engagement and learning. Despite these limitations, this research serves as a valuable contribution to the literature related to the student-athlete experience.

Definition of Terms

1. Academic Progress Rate (APR): The Academic Progress Rate is a metric used by the NCAA to measure academic success in college student-athletes accounting for the eligibility and retention of each student-athlete for each academic term (NCAA, 2015).
2. Division I (D-I): The highest-level of intercollegiate athletics sanctioned by the NCAA. The most visible institutions in this division sport a substantial general student body, manage the largest operating budgets, offer competitive facilities and generous scholarship funds (NCAA, 2015).
3. Federal Graduation Rate (FGR): a mandated metric used by the U.S. Department of education to measure academic success in college student-athletes. FGR measured the percentage of first-year, full-time students graduate within six years of entering their original four-year institution (NCAA, 2015).
4. Graduation Success Rate (GSR): a metric used by the NCAA Division I to measure academic success in college student-athletes accounting for student-athletes that

- transfer in and out of an institution and tracking graduation over six years (NCAA, 2015).
5. High-Profile: High-profile is a term used to describe the status of an NCAA sanctioned sport team based upon the level of broadcast media coverage of the sport, the type of recruitment efforts of the players, and the availability of professional athletics opportunities in a given sport (Williams et al., 2006). For the purpose of this study, high-profile sports include baseball, men's and women's basketball, and football.
 6. Low-Profile: Low-profile is a term used to describe the status of an intercollegiate sport team that is not classified under the definition of "high-profile" sport; however, involves all other NCAA sponsored sport teams (ex. swimming and diving, lacrosse, gymnastics, etc.).
 7. Student-Athlete: A term developed by the NCAA to describe an athlete that is participating in an institutionally sponsored sport while fulfilling the academic requirements towards completion of a college degree.
 8. Student Engagement: Student engagement involves two distinct components of the quality of the college experience. The NSSE defines student engagement as 1) "the amount of time and effort students put into their studies and other educationally purposeful activities" and 2) "how the institution deploys its resources and organizes the curriculum and other learning opportunities to get students to participate in activities that decades of research studies show are linked to student learning" (NSSE, 2013).

Organization of the Study

The study was conducted to obtain information about the engaging experiences and deep learning of first-year and senior student-athletes in high-profile and low-profile sports in comparison to their non-athlete peers. The intent of this study was to provide useful information to faculty, administrators, and other higher education professionals with regard to the differing engagement experiences and deep learning of student-athletes and their non-athlete peers.

Chapter I of this study specified the statement of problem, the purpose of the study, the significance of the study, the research questions, the hypothesis, the assumptions of the study, and the definition of terms. Chapter II reviewed the literature, which includes a brief history of intercollegiate athletics and previous research related to student engagement. This chapter also provided an overview of NSSE, student-athlete academic integration, engagement, deep learning, and the future of student-athletes in college. Chapter III described the research design, research questions, and method for the study, including the sample, analysis procedures, and limitations, as well as the validity, reliability, and generalizability of the NSSE instrument. Chapter IV presented the findings of the analysis. Finally, Chapter V concluded with an interpretation from the inferential analyses, the conclusions, implications, and recommendations for future research.

CHAPTER II

REVIEW OF LITERATURE

The primary purpose of this study was to report on National Collegiate Athletics Association (NCAA) Division I first-year and senior high-profile student-athletes' engagement in college, both in and out of the classroom, and compare those findings with those of low-profile student-athletes and the general student population. The study focused on the importance of engagement in effective educational practices and deep learning approaches as measured by the National Survey of Student Engagement (NSSE). The study sought to identify the important differences in engagement experiences and deep learning for first-year and senior student-athletes in high-profile sports versus other student populations.

Chapter II reviewed the literature, which included a brief history of intercollegiate athletics and previous research related to student engagement. This chapter also provided an overview of NSSE, student-athlete engagement, deep learning, and the future of student-athletes in college.

Research Questions

In this dissertation, the following research questions were examined:

RQ1: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ2: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

RQ3: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ4: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

History of Intercollegiate Athletics

Intercollegiate athletics at the nation's most prominent institutions has become a multi-billion dollar enterprise (Knight Commission on Intercollegiate Athletics, 2009). Established in 1972 with the purpose of providing a competitive avenue for amateur athletes in college to compete, the NCAA has grown to include three divisions (I, II, and III) ranging from four-year research institutions with operating budgets of over \$100 million to small liberal arts institutions (Knight Commission on Intercollegiate Athletics, 2009). The most visible collegiate athletics institutions field over twenty individual sport programs and teams. These elite institutions endeavour to sustain numerous sport teams because of their institutional history, NCAA requirements, and the legal power of Title IX (Knight Commission on Intercollegiate Athletics, 2009).

The NCAA defines the purpose of the governing body in the *NCAA Division I Manual* asserting that athletics programs at member institutions are a vital component of the educational system. The manual states:

A basic purpose of this Association [NCAA] is to maintain intercollegiate athletics as an integral part of the educational program and the athlete as an integral part of the student body and, by so doing, retain a clear line of demarcation between intercollegiate athletics and professional sports (NCAA, 2011, p. 1).

Along with the stated purpose, the NCAA has evaluated and monitored the academic performance and development of student-athletes through research and reforms since its formation in 1972 (Petr & McArdle, 2012). The “Collegiate Model of Athletics,” a term that is understood and supported by the NCAA member institutions and other college sports constituents, supports the call for amateurism. Athletes who participate in intercollegiate athletics garner the name “student-athlete” from the assumption and expectation that completing their baccalaureate requirements is their primary responsibility and reason for being in college. Principle 2.9 in the NCAA Division I Manual (NCAA, 2011) explains, “Student-athletes shall be amateurs in an intercollegiate sport, and their participation should be motivated primarily by education and by the physical, mental and social benefits to be derived.”

A series of highly publicized academic scandals in the 1980’s, most notably the discovery of several high-profile student-athletes who were functionally illiterate, led to significant changes in the eligibility rules implemented by the Association (Petr & McArdle, 2012). NCAA Proposition 48 was enacted in 1983 in an attempt to manage the academic preparedness of student-athletes being recruited to participate in collegiate athletics. Proposition 48 defines a minimum standard for high school grades and standardized test scores for incoming student-athletes in order to take part in intercollegiate athletics competition (NCAA, 2011).

On November 9, 1990, the federal government passed the Student-Right-to-Know and Campus Security Act (P.L. 101-542) (IPEDS, 2015). This act required all higher education institutions who are eligible for Title IX funding to report graduation rates for all students and furthermore, to create a separate report of the graduation rates for student-athletes to submit to the Secretary of the U.S. Department of Education each year (Hodge & LaForge, 2011; IPEDS, 2015). In response to the Federal Graduation Rate (FGR) requirements, the additional

regulations including the enactment of required tracking of graduation success rates (GSR) and academic progress rates (APR) of student-athletes were established by the NCAA.

The APR metric was created in 2003 in order to measure how scholarship athletes perform academically each term throughout the school year. The NCAA sets a minimum APR threshold of 930 and teams that do not make the threshold will be subject to various sanctions (NCAA, 2011). The GSR metric, formulated in 2005, measures student-athlete graduation rates over a six-year period. Student-athletes who leave the school on good academic standing do not take away from a school's final GSR and transfer students are eligible to be included in the calculations (Hodge & LaForge, 2011; NCAA, 2011).

As the NCAA has continued to gather data related to student-athlete academic performance in college, longitudinal studies have been performed in order to evaluate the impact of the academic policies (Petr & McArdle, 2012). Several relevant findings have emerged from the NCAA studies, including confirmation that diverse demographic groups of student-athletes have different distributions of scores related to test scores, grades, and other aptitude metrics. Though there has been growing concern related to the impact of any policies or rules that use academic performance measures as criteria, a study of the SAT Total for all incoming Division I first year students from 2002 to 2005 revealed that there was a consistent increase in the proportion of African Americans in the overall GSR cohort following new eligibility rules implemented in 2003.

History of the National Survey of Student Engagement

Student Engagement. Engaging experiences during college support the development of habits that strengthen a student's capacity for continuous learning and personal development (Kuh, 2001). Student engagement is considered to be among the more influential predictors of

learning and personal development in students during college (Carini et al., 2006; Kuh, 2003). Student engagement is explained in the context of a student's participation in educationally purposeful activities both inside and outside of the classroom, which lead to desirable outcomes and learning experiences (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007; Trowler, 2010). Engagement activities can include reading, writing, preparing for class, interacting with instructors about various matters, and talking with students of a different race or ethnicity (Kuh, 2001). Motivation, social integration and engaging experiences are all prominent factors related to student success during college (Kuh, 2001). In a study by Carini, Kuh and Klein (2006), a sample of 1,058 students at 12 four-year colleges was used to better understand the association between student engagement and academic performance. To confirm validity, several instruments were administered. The findings of that study indicated that measures of student engagement were positively correlated with desirable learning outcomes such as critical thinking and grades.

Several studies have demonstrated the important role various environmental characteristics play in desirable college outcomes in students (Anaya, 2009; Astin, 1984, 1993; Hu & Kuh, 2002, 2003; National Survey of Student Engagement, 2010a; Pascarella & Terenzini, 1991, 2005; Tinto, 1987). The theory of student involvement developed by Astin (1984) involves active participation of the student in the learning process. Involvement is defined as "the amount of physical and psychological energy that the student devotes to the academic experience" (Astin, 1984, p. 519). Literature related to how the college experience affects student learning and personal development often cites the seven principles of good practice in undergraduate education (Chickering & Gamson, 1987). Chickering and Gamson's seven principles, which include; (a) student-faculty contact, (b) cooperation among students, (c) active

learning, (d) prompt feedback, (e) time on task, (f) communication of high expectations and (g) respect of diverse talents and ways of learning, have been identified as impacting important learning outcomes for students in college (1987).

NSSE Instrument. The *NSSE College Student Report* is a student self-reported instrument used in higher education research to measure a student's level of engagement on campus and in the classroom (Kuh, 2003). The NSSE was launched in the spring of 2000 with a grant from The Pew Charitable Trusts and is sponsored by the Carnegie Foundation for the Advancement of Teaching. The purpose of the *The College Student Report*, also called the NSSE survey, is to provide a national survey of the undergraduate quality of education. The instrument asks students to report the frequency of which they engaged in activities related to good practice in education (Kuh, 2003) and, in turn, measures the extent to which students are engaged in effective educational practices. The NSSE survey is also used to evaluate developmental gains from the college experience (Kuh, 2001). Questions ranging from a student's participation in educationally purposeful activities to questions regarding the frequency of student-faculty interaction on a research project are included in the survey.

The methods used for distribution of the NSSE survey are unique. Each spring, the Indiana University Center for Survey Research, an independent third party, sends the questionnaire directly to randomly selected first-year and senior students at participating four-year institutions of higher education (Kuh, 2001). Standardized survey administration procedures are used in order to make sure that each student has an equal opportunity of being selected to receive the questionnaire.

Effective Educational Practices. Forty-two key items on the NSSE survey are used to explain five benchmarks representing effective educational practices in education supported by

the previous research of Chickering and Gamson (1987). These five NSSE Benchmarks of Effective Education, which include (a) level of academic challenge, (b) active and collaborative learning, (c) student-faculty interaction, (d) enriching educational experiences, and (e) supportive campus environment, encompass the more influential contributors to desirable student learning outcomes and student personal development (Kuh, 2001; Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006).

As defined in the *NSSE 2010 Codebook* (Appendix F), Level of Academic Challenge includes an eleven-item scale used to measure time spent preparing for class, the amount of time a student spends reading and writing, deep learning and institutional expectations for academic performance. Active and Collaborative Learning is a seven-item scale index that measures the extent of a student's class participation, if they work collaboratively with other students inside and outside of class and tutoring and involvement with a community-based project. Student-Faculty Interaction involves a six-item scale that measures degree a student talks with faculty members and advisors, discusses ideas from classes with faculty members outside of class, receives prompt feedback on academic performance, and works with faculty on research projects. Enriching Educational Experiences consists of a twelve-item scale that measures extent a student interacts with students of different racial or ethnic backgrounds or with different political opinions or values, uses electronic technology, and participates in activities such as internships, community service, study abroad, co-curricular activities, and culminating senior experience. Supportive Campus Environment includes a six-item scale that measures extent to which students perceive that the campus helps them succeed academically and socially, assists them in coping with non-academic responsibilities, and promotes supportive relations among

students and their peers, faculty members, and administrative personnel and offices (NSSE, 2010b).

Student-faculty Interaction. Interactions with faculty are strongly related to student satisfaction with their college experiences (Astin, 1993) and meaningful contact with faculty members has been empirically shown to have a positive effect on students during college (Astin, 1984, 1993; Quaye & Harper, 2014; Kuh & Hu, 2001; Kuh, Kinzie, Schuh, Whitt, & Associates, 2010; Umbach & Wawrzynsky, 2005). Student-faculty interaction involves formal and informal interactions with students from teachers, advisors and on campus mentors (Kuh et al., 2006). Interactions with faculty are most impactful in the learning process when they encourage students to “devote greater effort to other educationally purposeful activities” (Kuh et al., 2006, p. 48).

Astin (1993) explains that students who participate actively and collaboratively with faculty during college are more satisfied with the institution and other aspects of the educational experience. The effects of faculty interaction on retention, graduation rates and preparation for employment have been discussed with varying outcomes (Astin, 1984; Astin, 1993; Pascarella, 1980; Pascarella & Terenzini, 1991; Howard-Hamilton & Sina, 2002). A study performed by Alexander Astin (1993) revealed that after peer group involvement, interaction with faculty represents the most significant aspect of a student’s development in college. More specifically, Astin (1993) postulated that the frequency and nature of the student-faculty interaction together have the strongest impact; for example, when the interactions are more substantive as opposed to a routine communication exchange (Pascarella & Terenzini, 1991). Furthermore, a student’s integration into the institution and faculty-student interaction are both prominent factors related to student attrition and persistence towards graduation (Tinto, 1993).

Deep Learning. Educational psychologists, Ference Marton and Roger Säljö (1976) sought to understand student approaches to learning through qualitative methods. Through their clinical studies, Marton and Säljö classified student learning into two main categories described as either “surface” or “deep.” A student using surface approach uses words or signs to complete objectives, often through the form of rote memorization; whereas, a deep learning approach involves seeking a full understanding of the meaning of the content. More recently, data collected by the NSSE has been used to develop scales to investigate and better understand deep approaches to student learning (Laird, Shoup, & Kuh, 2005). Using data from the 2004 and 2005 administration of the NSSE, Laird and colleagues (2005) constructed three categories of deep learning using 12 items from the survey. Upon performing a factor analysis, the three categories: higher-order learning, integrative learning, and reflective learning were combined to confirm the second-order construct, identifying students who took a “deep” approach to learning.

Higher-Order Learning uses a four-item scale from the NSSE to measure the amount a student believes that their coursework encourages progressive critical thinking skills. These skills may include analyzing the basic elements of a concept, experience or theory and synthesizing the concept, experience or theory into a new, more complex orientation (Laird et al., 2005). Integrative Learning is comprised of a five-item scale that measures how a student is able to connect life experiences and diverse perspectives with multidisciplinary study (Huber & Hutchings, 2004). Reflective Learning consists of a five-item scale used to evaluate how a student internally examines and explores an issue or concept and relates to an experience. Through this reflection, a student is able to obtain new understanding and appreciation of a subject matter (Brockbank & McGill, 2007).

The literature using the NSSE Deep Learning scales to measure deep approaches to learning for college students has grown tremendously over the past decade (Laird, Shoup, & Kuh, 2008; Mayhew, Seifert, Pascarella, & Blaich, 2012; Pascarella, Seifert, & Blaich, 2009; Reason, Cox, McIntosh, & Terenzini, 2010). A study performed by Laird and colleagues (2008) using NSSE data asserted the validity of the deep learning scales, concluding that deep learning is positively related to first-year students' self-reported gains. Using a pretest/posttest longitudinal design, Pascarella and colleagues (2009) explored the validity on of the NSSE in predicting positive engagement and learning outcomes at liberal arts institutions. The study concluded that the NSSE Benchmarks and Deep Learning Scales were significantly and positively associated with desirable learning and developmental outcomes (Pascarella et al., 2009). Reason and colleagues (2010) further examined the relationship between deep learning and self-reported gains as defined by the NSSE, finding that though there is a relationship between deep learning and self-reported gains in first-year students. It is important to note that the generalizability of the assertion should be considered with caution due to the "lack of relationship between the deep learning scale and critical thinking (Reason et al., 2010)."

Additional Data Sources. In addition to the NSSE, the College Students' Beliefs and Values Survey and Cooperative Institutional Research Program (CIRP) Freshman Survey are commonly used survey instruments in higher education research used to evaluate student self-reported engagement, growth and other gains (Anaya, 1999; Higher Education Research Institute, 2015). The Higher Education Research Institute (HERI) at the University of California, Los Angeles administers the CIRP Freshman Survey and the College Students' Beliefs and Values (CSBV) survey, which can both be used to investigate the engaging experiences of college students. In collaboration with the CIRP, the CSBV is a multi-year survey used to

evaluate trends and patterns related to a student's spirituality and religiousness (Higher Education Research Institute, 2015).

Student-Athlete Academic Integration: Theoretical Framework

Similar to the general student population, student-athletes face distinct challenges related to cognitive and psychosocial development during college (Carodine, 2001; Sedlacek & Adams-Gaston, 1992). Several studies have discussed the influence of college environmental characteristics on the academic performance and engagement of student-athletes (Comeaux, 2005; Coumeaux et al., 2011; Engstrom & Sedlacek, 1995; Gayles & Huh, 2009; Pascarella et al., 1999; Potuto & O'Hanlon, 2007; Umbach, Palmer, Kuh, & Hannah, 2006).

Academic and social integration are prominent factors of student persistence in college (Astin, 1975; Tinto, 1993, 1997). Academic integration has a strong positive influence on persistence when social integration is relatively low (Mangold, Bean, & Adams, 2003). In a study performed by Mangold and colleagues (2003) based on information retrieved from the 1996-1999 editions of *US News Best Colleges in America* and the US Department of Education's Integrated Postsecondary Educational Data System (IPEDS), social involvement in intercollegiate sports was found to have a negative relationship between graduation rates. The time demands participating at the NCAA Division I level limit the extent that student-athletes can become involved in a college environment (Comeaux & Harrison, 2011; Quaye & Harper, 2014).

A study of the attitudes of faculty at an eastern public research university with an NCAA Division I program indicated that faculty members perceive male student-athletes negatively in situations dealing with academic aptitude, support services and recognition (Engstrom, McEwen, Sedlacek, 1995). The survey utilized the Situational Attitude Scale (SAS) to assess faculty

attitudes towards student-athletes. Several items, including the idea that most student-athletes receive a full scholarship to college and may be admitted with lower SAT scores, prompted stronger feelings of anger and resentment from faculty towards revenue and non-revenue student-athletes when compared to the general student population. Additionally, student-faculty interaction has been found to be less frequent outside the confines of the classroom in African American male student-athletes when compared with other populations on campus (Person, 1997).

On Division I campuses, support services specifically for student-athletes include academic counselors, tutors, mentors and other resources provided to support student-athletes' management of academics and athletics tasks. These support services work in collaboration with the faculty and campus administration in an effort to provide a positive overall college experience for the student-athletes (Carodine et al., 2001). Pre-orientation academic enhancement programs and other retention programs, coupled with academic tutors and mentors are utilized to assist student-athletes throughout their intercollegiate career. Academic services buildings and support staffs for student-athletes have grown consistently in the 21st century; however, institutional admission standards have continued to lessen and NCAA academic regulations have stiffened (Wolverton, 2008).

Despite the academic resources provided and the messages portrayed, studies have shown that contrary to their non-athlete peers, academic performance is often not the motivating factor for student-athletes' success (Autrey, 2010; Simons, Van Rheenen, & Covington, 1999). The intrinsic motivation towards academic achievement of student-athletes also differs for those in high-profile sports compared to those in low-profile sports (Gayles, 2004). Several scholars have raised questions related to the effects of student development programs and practices on

student-athlete retention, graduation rates and preparation for employment when compared to their non-athlete peers (Astin, 1993; Pascarella & Terenzini, 1991; Howard-Hamilton & Sina, 2002).

Criticism of athletics support programs includes the assertion that institutions may be creating a separate culture allowing student-athletes to become socially segregated from the general student population (Gayles, 2009; Hyatt, 2003). In January 2015, the NCAA head of enforcement reported that the governing body was undertaking an evaluation process that involved at least 18 separate cases of academic fraud across the NCAA Division I, II, and III (Wolverton, 2015).

Moreover, a study performed by Comeaux, et al. (2011) found that first-year student-athletes in revenue and non-revenue sports differed significantly in relation to their academic and athletics identities. The types of interactions and experiences that student-athletes have in college shape their academic identity and influence their chances for academic success (Comeaux, et al., 2011; Gayles & Huh, 2009; Umbach et al., 2006). A conceptual framework for understanding academic success for student-athletes developed by Comeaux and Harrison (2011), further delineates the factors contributing to their success.

Figure 1 suggests that a student-athlete's academic success is directly linked to a set of individual characteristics and dispositions (Comeaux, et al., 2011). These characteristics are affected by the social and academic systems within which the student-athlete operates. The relationships that student-athletes establish with faculty and peers other than their teammates were found to affect academic success, providing evidence that the relationships student-athletes have with faculty allow opportunities for mutual assistance and support. Interactions

with faculty increase the social integration of student-athletes and enhance intellectual development (Umbach et al., 2006).

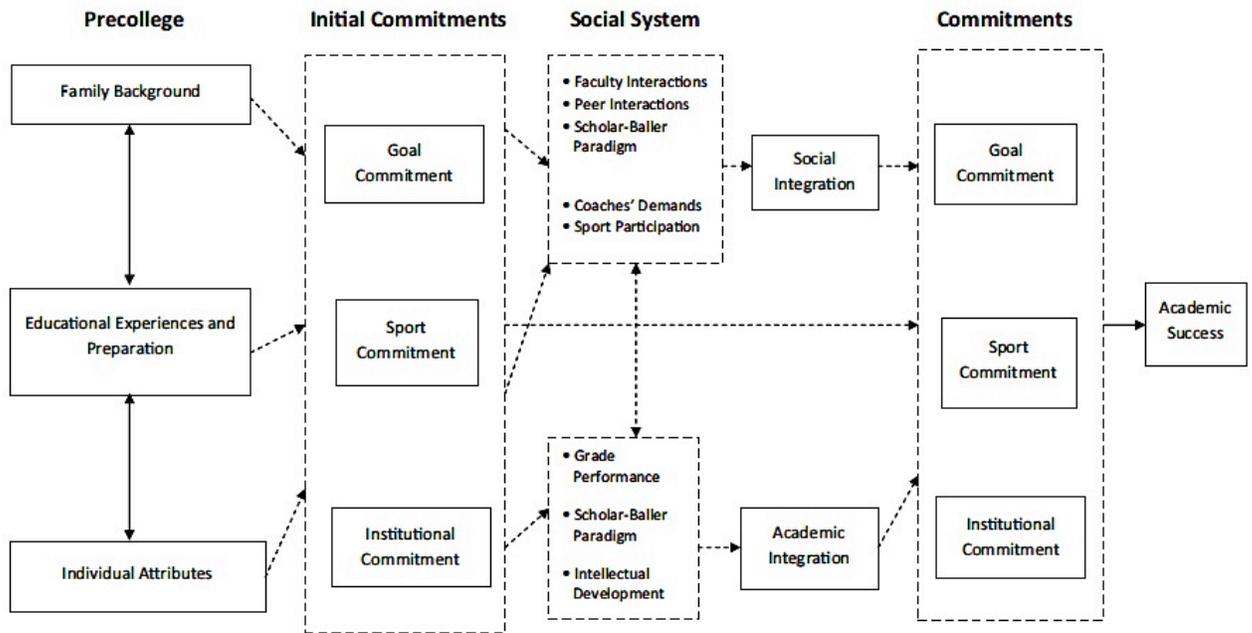


Figure 1. A conceptual model of success for student-athletes. (Comeaux, E. & Harrison, C.K., 2011)

Socioeconomic status (SES) and other precollege variables including gender, race or ethnicity, high school rank, and SAT or ACT score influence student development during college. Increased support from campus administration and peers can enhance student persistence on campus (Astin, 1993). When examining student-athletes as nontraditional students, Sedlacek and Adams-Gaston (1992) found that non-cognitive variables such as engaging experiences were more effective predictors of student-athlete academic success in college than SAT scores.

As noted earlier, student-athlete success metrics are determined using APR and GSR, and due to NCAA regulations, each student-athlete is required to show progress towards his or her

degree on an annual basis to remain eligible to compete (Autry, 2010). The progress toward degree rule, often referred to as the 40-60-80 rule, is a section of legislation designed by the NCAA to improve retention and graduation rates of NCAA Division 1 student-athletes. NCAA Bylaw 14.4.3.2. states, “A student-athlete who is entering his or her third year of collegiate enrollment shall have completed successfully at least 40 percent of the course requirements in the student's specific degree program” to remain eligible (NCAA Manual, 2014, p. 164). Eligibility constraints cause institutions to implement rules and programs that give the student-athlete little margin for error.

Student-Athlete Engagement and Cognitive Development

Engagement. Environmental characteristics such as purposeful engagement activities and interaction with faculty are a critical component of the theoretical model of student-athletes’ academic success (Comeaux & Harrison, 2011). Positive outcomes of student engagement include persistence, improved grades, and personal satisfaction (Kuh et al., 2006). Engagement in educationally purposeful activities has significant impact on certain college outcomes such as personal self-concept and learning and communication skills for student-athletes, which is similar to that of the general student population (Gayles & Huh, 2009; Pascarella & Terenzini, 1991). Engagement requires effort from the student as well as institutional support through policies, programs, and practices to foster active participation. Student engagement can be defined through the following premise, explained by George Kuh (2009):

The more students study a subject, the more they know about it, and the more students practice and get feedback from faculty and staff members on their writing and collaborative problem solving, the deeper they come to understand what they are learning

and the more adept they become at managing complexity, tolerating ambiguity, and working with people from different backgrounds or with different views. (p. 5)

Experiences during participation in collegiate athletics have been shown to support the development of listening, cooperation, and communication skills in student-athletes (Howard-Hamilton & Sina, 2002). Studies assessing student-athlete engagement have noted that the student-athlete population is a relatively difficult population to reach (Pascarella et al., 1999; Williams et al., 2006). Additionally, background characteristics have been found to have little significance on the extent student-athletes engage in educationally purposeful activities (Gayles & Hu, 2009).

Studies in the literature referencing student-athlete engagement on campus suggest student-athletes are just as, if not more, engaged in on campus activities and interactions when compared to their non-athlete peers (Aires & Richard, 1999; Kuh et al., 2006; Umbach et al., 2006; Williams et al., 2006). Previous research performed evaluating student-athlete experiences using the NSSE has been unable to delineate the primary and secondary sport type of the student-athlete based upon the survey used (Kuh et al., 2006; Umbach et al., 2006). Other studies comparing student-athlete demographics (male/female, African-American/white, revenue/non-revenue, high-profile/low profile) have presented contrary results related to student-athlete satisfaction with their college experiences (Gatson & Hu, 2009; Potuto & O'Hanlon, 2007).

As noted earlier, student-athletes devote a considerable amount of time to activities related to their sport. In a study by Aries and Richard (1999), student-athletes reported committing significantly more hours to extracurricular activities than non-athletes. Despite the greater time commitment, student-athletes were as involved in several aspects of campus life and experienced personal growth and satisfaction similar to that of non-athletes. The sample of 219

student-athlete and non-athlete seniors examined by Aries and Richard were taken from a single Division III institution. Therefore, it is difficult to generalize these findings to other colleges and universities, especially those on the Division I level.

Using data from the 2003 administration of the NSSE, Umbach and colleagues (2006) asserted that the engaging experiences of first-year student-athletes did not differ from the general population across institutional type (Division I, II, & III). Their analysis revealed student-athletes were as engaged in educationally purposeful activities as their non-athlete counterparts. Male student-athletes were comparable to male non-athletes on measures of academic challenge, student-faculty interaction, and active and collaborative learning participation. In addition, male and female student-athletes reported that their campus offered more academic and social support compared to non-athletes.

In a review of literature of student engagement, Kuh and colleagues (2006) explained that compared with other seniors, student-athletes are more likely to be involved in community projects and senior research experiences than non-athletes, regardless of gender or NCAA division. The report also explained that high-profile student-athletes have shown signs of being less academically challenged compared to low-profile student-athletes. In a comparison of the educational experiences and self-reported gains between high-profile student-athletes and non-athletes, Williams and colleagues (2006) found male high-profile student-athletes scored significantly higher than male non-athletes on all measures of student engagement. The background characteristics controlled in the study (ethnicity, non-traditional aged student, Greek, full time student, campus resident, etc.) were not found to account for the differences between high-profile student-athletes and their non-athlete peers. Male and female student-athletes reported greater gains in intellectual and personal development than non-athletes. However,

male student-athletes were less satisfied with their higher education experience than male non-athletes.

In a study performed by Gatson & Hu (2009), the Basic Academic Skills Study (BASS) and Progress in College (PIC) subscale were used to better articulate the contributing factors to engagement in educationally purposeful activities for student-athletes in different sports. It is important to note that since this study did not compare student-athletes with the general student population, generalizability to other student populations should be considered with caution. The study found evidence that the type of sport in which a student-athlete participates has an influence on engagement and cognitive outcomes. In another study performed by surveying senior student-athletes at eighteen Division I-A (FBS) schools, Potuto and O’Hanlon (2007) found that student-athletes had generally positive perceptions of their college experience. In this study, over 95 percent of the student-athletes surveyed believed that the skills they developed in college would aid their success post-graduation. Moreover, over 60 percent of student-athletes perceived themselves as an “athlete first.”

Cognitive Development. Peer interactions and participation in academic related activities have been shown to produce greater gains in learning and communication skills for low-profile student-athletes compared to high-profile student-athletes (Gatson & Hu, 2009). Studies related to various learning outcomes have provided a consensus on the cognitive development of student-athletes in high-profile sports, especially football and men’s basketball (Gatson & Hu, 2009; Pascarella et al., 1995; Pascarella et al., 1999). Student-athletes in high-profile sports have been shown to experience cognitive decline during college when compared to student-athletes in low profile sports and non-athletes.

In a study performed to assess reading comprehension, mathematics, and critical thinking controlling for pre-college aptitude in first-year students, Pacarella and colleagues (1995), found that males participating in football and basketball “experienced net declines in reading comprehension and math skills” (p.1) during their first year where as non-athletes and other student-athletes reported net gains. In a follow up study performed by Pascarella and colleagues (1999) on second and third year students at Division I institution, there was no significant effect on cognitive development in female student-athletes; however, male football and basketball student-athletes again scored significantly lower scores on standardized measures of reading comprehension and mathematics when compared to other male athletes and their male non-athletes peers. The findings of the Pascarella and colleagues (1999) study indicated that the negative cognitive influence of sport participation during college may be specific to the distinct disadvantages, exposure, and pressures of football and men’s basketball players, not their engaging experiences.

Additionally, Gayles & Hu (2009) found that student-athletes in high-profile sports reported less positive cultural attitudes towards the campus environment when compared to those in low-profile sports. In the study, student-athletes differed from their non-athlete peers in relation to their career maturity, psychosocial development, and career maturity (Gayles & Hu, 2009).

The Future of Student-Athletes in College

The collegiate model for athletics has been under continual reform. In 1929, the Carnegie Fund for the Advancement of Teaching presented a report addressing many of the issues we still see in collegiate athletics today. The report stated that “recruiting had become corrupt, professionals had replaced amateurs, education was being neglected, and commercialism

reigned” (Knight Foundation, 1991, p. 22). These issues are in large measure still true as the commercialism of athletics has increased and the line between amateurism and professionalism has been blurred. For example, college football and basketball players are gaining traction on the organization of a labor union (Wolverton, 2014), the “Power Five” conferences have been established (Bennett, 2014), and student-athletes benefits have amassed (Wolverton & Kambhampati, 2015)

In August, 2014, the NCAA Division I board of directors voted to allow institutions in the top five conferences to pursue autonomy measures, creating the “Power Five” conferences (Bennett, 2014). Since the vote was passed, student-athletes are now offered the full cost of attendance to attend college, multi-year scholarships, and other student-athlete well being initiatives such as unlimited student-athlete meals and snacks (Hosick, 2014; Wolverton & Kambhampati, 2015).

Summary

Chapter II presented a history of intercollegiate athletics (Knight Commission on Intercollegiate Athletics, 2009; Petr & McArdle, 2012; NCAA, 2011) and provided an overview of the development NSSE survey instrument used in the study (Chickering & Gamson, 1987; Kuh, 2001; 2003). The important role various environmental characteristics play in desirable college outcomes was discussed (Anaya, 2009; Astin, 1984, 1993; Hu & Kuh, 2002, 2003; National Survey of Student Engagement, 2010a; Pascarella & Terenzini, 1991, 2005; Tinto, 1987) and the dependent variables related to effective educational practice including student-faculty interaction (Astin, 1984, 1993; Kuh & Hu, 2001; Kuh et al., 2010; Quaye & Harper, 2014; Umbach & Wawrzynsky, 2005) and deep learning (Laird et al., 2008; Mayhew, et al., 2012; Pascarella et al., 2009; Reason et al., 2010) were presented. The literature related to

student-athlete academic integration and engagement in college was discussed (Autrey, 2010; Astin, 1993; Comeaux, 2005; Comeaux et al., 2011; Howard-Hamilton & Sina, 2002; Engstrom & Sedlacek, 1995; Gayles & Huh, 2009; Pascarella & Terenzini, 1991; Pascarella et al., 1999; Simons et al., 1999; Umbach et al., 2006) and the future of student-athletes in college was featured.

CHAPTER III

METHOD

The primary purpose of this study was to report on National Collegiate Athletics Association (NCAA) Division I first-year and senior high-profile student-athletes' engagement in college, both in and out of the classroom, and compare those findings with those of low-profile student-athletes and the general student population. The study focused on the importance of engagement in effective educational practices and deep learning approaches as measured by the National Survey of Student Engagement (NSSE). The study sought to identify the important differences in engagement experiences and deep learning for first-year and senior student-athletes in high-profile sports versus other student populations.

This chapter addressed the instrument used, sample, research design, and the data retrieval and procedures of the study. The analysis techniques were reviewed, and the validity, reliability, and generalizability of the study were discussed.

Research Questions

In this dissertation, the following research questions were examined:

RQ1: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ2: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

RQ3: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ4: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

Survey Instrument

The NSSE *College Student Report* is an annual self-reporting survey for first-year and senior students in college (NSSE, 2013). The NSSE is traditionally administered in a web-based format to randomly selected first-year and senior students at participating institutions. Through the *College Student Report*,

NSSE annually collects information at hundreds of four-year colleges and universities about first-year and senior students' participation in programs and activities that institutions provide for their learning and personal development. The results provide an estimate of how undergraduates spend their time and what they gain from attending college (NSSE, 2013, n.p.).

The survey is comprised of 42 items used to measure student participation in educationally purposeful activities according to the seven principles of undergraduate education defined by Chickering and Gamson (1987). Questions on the survey are related to experiences and interactions in and out of the classroom, personal development, academic understanding, and interactions with peers, administrators, and faculty throughout college. The five Benchmarks of Effective Educational Practice include (a) Level of Academic Challenge, (b) Active and Collaborative Learning, (c) Student-Faculty Interaction, (d) Enriching Educational Experiences, and (e) Supportive Campus Environment. A copy of the 2010 NSSE Survey and details

regarding the scales used for each of the five NSSE benchmarks can be found in Appendix D and F, respectively.

“*Deep learning* represents student engagement in approaches to learning that emphasize integration, synthesis, and reflection” (Laird et al., 2008, p. 469). The three Deep Learning Scales measured by the NSSE include (a) Higher-Order Learning, (b) Integrative Learning, and (c) Reflective Learning. Higher-Order Learning involves the amount students believe that their coursework develops their critical thinking skills. The four items of the NSSE survey that comprise the Higher-Order Learning Scale include the following:

HL1: Analyzed the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components.

HL2: Synthesized and organized ideas, information, or experiences into new, more complex interpretations and relationships.

HL3: Made judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions.

HL4: Applied theories or concepts to practical problems or in new situations.

Integrative learning involves a student’s ability to connect life experiences, diverse perspectives, and multidisciplinary study to their college experiences (Huber & Hutchings, 2004). The five items on the NSSE survey that comprise the Integrative Learning Scale include the following:

IL1: Worked on a paper or project that required integrating ideas or information from various sources.

- IL2: Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments.
- IL3: Put together ideas or concepts from different courses when completing assignments or during class discussions.
- IL4: Discussed ideas from your readings or classes with faculty members outside of class.
- IL5: Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.).

Reflective learning relates to a personal examination and exploration of an issue or concept as it relates to a lived experience. The five items of the NSSE survey that comprise the Reflective Learning Scale include the following:

- RL1: Examined the strengths and weaknesses of your own views on a topic or issue.
- RL2: Tried to better understand someone else's views by imagining how an issue looks from his or her perspective.
- RL3: Learned something that changed the way you understand an issue or concept.
- RL4: Learned something from discussing questions that have no clear answers.
- RL5: Applied what you learned in a course to your personal life or work.
- RL6: Enjoyed completing a task that required a lot of thinking and mental effort.

Sample

The original data set retrieved from the NSSE included a sample of more than 7,000 NCAA Division I student-athletes (first-year and seniors) and 30,000 non-athlete students from the general population (first-year and seniors). Missing data, incomplete answers, and inappropriate survey responses (including answers of “5” for all responses or claiming to be a

member of the “ping-pong” sport team) were detected and eliminated so that only students who completed the entire survey were included. After eliminating the errors in the data, approximately 24,000 respondents (student-athlete and non-athlete, first-year and seniors) remained, allowing for the potential of substantial statistical power in the analysis. Statistical power depends on several criteria regarding significance, including the sample size and the population effect size (Cohen, 1992).

Research Design

The research design for this study involved a secondary analysis of data collected from first-year and senior students at NCAA Division I institutions that participated in the 2010 administration of the NSSE *College Student Report*. In 2004, the NSSE added an additional question to the survey to identify the sport type in which the student-athlete participated. Since sport type could be identified in the data used for the purpose of this study, only student-athletes who participated in an NCAA Division I sanctioned sport were included as “student-athletes.” A list of the NCAA Division I sponsored sports can be found in Figure 2.

The Division I is the highest level of intercollegiate athletics sanctioned by the NCAA in the United States (U.S.). In 2010, 572 institutions within the U.S. participated in the administration of the NSSE (NSSE, 2010). The U.S. participating institutions generally mirror the national distribution of the 2005 Basic Carnegie Classification (2010). Quantitative studies are said to be replicable and useful for further research because of the rigors of creating an instrument that effectively measures a certain construct while maintaining validity and reliability (Creswell, 2003). Based on the research questions presented and the population to be studied, the NSSE survey instrument was determined to provide all the necessary information needed for the purpose of the study.

LIST OF NCAA-SPONSORED SPORTS

Fall Sports

Cross Country (W)
Cross Country (M)
Field Hockey (W)
Football (M)
Soccer (W)
Soccer (M)
Volleyball (W)
Water Polo (M)

Winter Sports

Basketball (W)
Basketball (M)
Bowling (W)
Fencing (M)
Fencing (W)
Gymnastics (W)
Gymnastics (M)
Ice Hockey (W)
Ice Hockey (M)
Rifle (M)
Rifle (W)
Skiing (M)
Skiing (W)
Swimming and Diving (W)
Swimming and Diving (M)
Indoor Track and Field (W)
Indoor Track and Field (M)
Wrestling (M)

Spring Sports

Baseball (M)
Golf (W)
Golf (M)
Lacrosse (W)
Lacrosse (M)
Rowing (W)
Softball (W)
Tennis (W)
Tennis (M)
Outdoor Track and Field (W)
Outdoor Track and Field (M)
Volleyball (M)
Water Polo (W)

Emerging Sports

Equestrian (W)
Rugby (W)
Sand Volleyball (W)

Figure 2. Sport teams sponsored by the NCAA (NCAA, 2012, p. 23).

In order to obtain a representative sample of the student groups, a stratified random sampling technique was used (Fraenkel, Wallen, & Hyun, 1993). Multivariate analyses were applied to determine the relationship of the responses of students-athletes and their non-athlete peers regarding engagement in effective educational practices and the deep learning approaches. Both multivariate analysis of variance (MANOVA) and analysis of variance (ANOVA) techniques were used. MANOVA has several advantages over conducting multiple ANOVAs because by measuring several dependent variables at one time, there is a better chance of determining which factors are important and MANOVA protects against several Type I errors

that may occur if multiple ANOVA's were conducted independently (French, Macedo, Poulsen, Waterson, & Yu, 2002). These inferential statistical procedures were employed to evaluate and determine the relationships between the three student groups. Inferential statistical techniques such as the MANOVA allow researchers to use samples in order to make generalizations about the populations from which the samples were drawn (McMillan & Schumacher, 2014).

Data Retrieval and Procedure

Approval from the university's institutional review board was obtained prior to procuring the NSSE data (Appendix C). NSSE data were used with permission from the Indiana University Center for Postsecondary Research through the execution of a Data Sharing Agreement (Appendix B). The data files obtained from the NSSE included no identifiable information of the institutions or respondents, thus ensuring confidentiality and anonymity. The data set was analyzed using a statistical analysis program, Statistical Package for the Social Sciences (SPSS ver. 22.0).

In order to address the research questions presented in this study, first-year and senior students were analyzed separately because of their differing proficiencies, years of engaging experiences, and behavioral patterns both in and out of the classroom (Pascarella & Terenzini, 1991). The first-year and senior student data were divided into separate and distinct subpopulations (general population, low-profile, high-profile). Student-athletes were identified using two survey items: "Are you a student-athlete on a team sponsored by your institution's athletics department?" and "On what team(s) sponsored by your institution's athletics department are you an athlete?" (Appendix D). The NCAA Division I 2009-2010 Race and Ethnicity Report in Appendix A was used to determine the demographic make-up of student-athletes in high-profile sports in 2010 (NCAA, 2010). Demographic percentages from the

NCAA report were used to create groups using stratified random sampling as indicated in the next sections.

First-Year Students. Three student groups (FYG1, FYG2, FYG3) of equal size were created from the first-year student sample using stratified random sampling ($n = 220$). Similar to a study on student-athlete engagement performed by Williams and colleagues (2006), the determination of high-profile sport status was made based on: the level of broadcast media coverage of individual sports, the type of recruitment efforts athletes are subjected to prior to enrolling with an institution, and whether opportunities to compete professionally exist in a particular sport.

FYG1: Student-athletes who participated in institutionally-sponsored baseball, men’s or women’s basketball, and football, which were the “high-profile” sports.

FYG2: Student-athletes who participated in the all other institutionally sponsored “low-profile” sports, such as swimming, tennis, gymnastics, and softball.

FYG3: Non-athlete students from the general population.

Demographic characteristics of the first-year stratified random samples by gender and ethnicity are shown in Tables 1 and 2.

Table 1

Demographic characteristics of first-year stratified random samples by gender

Sex	FYG1	Percent	FYG2	Percent	FYG3	Percent
Male	187	85.0%	78	35.5%	82	37.3%
Female	33	15.0%	142	64.5%	138	62.7%
Total	220	100.0%	220	100.0%	220	100.0%

Table 2

Demographic characteristics of first-year stratified random samples by ethnicity

Racial or Ethnic Identification (<i>race05</i>)	FYG1	Percent	FYG2	Percent	FYG3	Percent
Black or African American	90	40.9%	14	6.4%	18	8.2%
White (non-Hispanic)	110	50.0%	172	78.2%	146	66.4%
Hispanic	6	2.7%	7	3.2%	17	7.7%
American Indian or Alaska Native	1	0.5%	0	0.0%	1	0.5%
Asian or Pacific Islander	2	0.9%	5	2.3%	19	8.6%
Other	8	3.6%	14	6.4%	13	5.9%
Two or More Races	3	1.4%	8	3.6%	6	2.7%
Total	220	100.0%	220	100.0%	220	100.0%

Senior Students. Three student groups (SG1, SG2, SG3) of equal size were created from the senior sample using stratified random sampling ($n = 173$).

SG1: Student-athletes who participated in institutionally-sponsored baseball, men's or women's basketball, and football, which are the "high-profile" sports.

SG2: Student-athletes who participated in the all other institutionally sponsored "low-profile" sports, such as swimming, tennis, gymnastics, and softball.

SG3: Non-athlete students from the general population

Demographic characteristics of the stratified random samples of seniors by gender and ethnicity are shown in Tables 3 and 4.

Table 3

Demographic characteristics of senior student stratified random samples by gender

Sex	SG1	Percent	SG2	Percent	SG3	Percent
Male	128	74.0%	70	40.5%	67	38.7%
Female	45	26.0%	103	59.5%	106	61.3%
Total	173	100.0%	173	100.0%	173	100.0%

Table 4

Demographic characteristics of senior student stratified random samples by race05

Racial or Ethnic Identification (<i>race05</i>)	SG1	Percent	SG2	Percent	SG3	Percent
Black or African American	71	41.0%	7	4.0%	10	5.8%
White (non-Hispanic)	86	49.7%	133	76.9%	123	71.1%
Hispanic	5	2.9%	6	3.5%	10	5.8%
American Indian or Alaska Native	1	0.6%	2	1.2%	1	0.6%
Asian or Pacific Islander	2	1.2%	5	2.9%	11	6.4%
Other	6	3.5%	13	7.5%	13	7.5%
Two or More Races	2	1.2%	7	4.0%	5	2.9%
Total	173	100.0%	173	100.0%	173	100.0%

Data Analysis

For first-year and senior students, the five NSSE Benchmarks of Effective Education Practice; Level of Academic Challenge (*LAC*), Active and Collaborative Learning (*ACL*), Student-Faculty Interaction (*SFI*), Enriching Educational Experiences (*EEE*), Supportive Campus Environment (*SCE*), and the Deep Learning Scales; Higher-Order Learning (*HL*), Integrative Learning (*IL*), Reflective Learning (*RL*), were used as dependent variables (*DV*) in the analyses. Using the three student groups as independent variables, MANOVAs were

employed to test for mean differences, separately for first-year and senior students. The MANOVA is an analysis of variance technique that includes several dependent variables. Analyses included testing for mean differences in the NSSE benchmark indicators and deep learning approaches for the three student groups. Box's M was used to test the assumption of equality of covariance matrices. When the matrices were equal, the statistic was non-significant (Field, 2009).

Levene's test of equality of variance was applied for each dependent variable (Levene, 1960) and Wilks' λ was used for the purpose of the analysis. Wilks' λ has historically been used in significance tests for MANOVA because the procedure involves recognized χ^2 and F approximations (Rencher, 2003). Tukey's Honestly Significant Difference (*HSD*) test was used as a conservative method for controlling Type I error rates for multiple comparisons. Tukey's *HSD* is an inferential statistic which tests the assumption that the variances of each variable are equal across the groups in a MANOVA and ANOVA (Levene, 1960).

MANOVA analysis procedures should be followed by F -tests on the individual variables only when overall MANOVA is significant in order to identify the dependent variables that contributed to the significant overall effect (Rencher, 2003). In SPSS, partial eta-squared (η^2) is presented as a measure of effect size for use in ANOVA. η^2 ranges between zero and one and the magnitude is interpreted as follows, $\eta^2 \geq .01$ – small, $\eta^2 \geq .06$ - medium, $\eta^2 \geq .14$ - large, (Cohen, 1988). As guided by the original NSSE conceptual framework (Kuh, 2003), individual survey item analyses were included *post-hoc* when statistical significance was found in overall comparison. Additional effect sizes were explained using Cohen's d . In general, the standardized mean differences are interpreted as follows, $d \geq .20$ - small, $d \geq .50$ - medium, $d \geq .80$ - large (Cohen, 1988).

Validity, Reliability and Generalizability

Institutions use self-reported survey data to evaluate the quality of undergraduate education (NSSE, 2003). Validity refers to the degree to which an instrument or test measures what it seeks to measure. Self-reported data are likely to be valid under the following conditions explained by Kuh (2003),

1. The information requested is known to the respondents.
2. The questions are phrased clearly and unambiguously.
3. The questions refer to recent activities.
4. The respondents think the questions merit a serious and thoughtful response.
5. Answering the questions does not threaten, embarrass, or violate the privacy of the respondent to respond in socially desirable ways. (p. 3)

The NSSE *College Student Report* was designed by social science researchers to meet these specific conditions for validity when using self-reported data (Kuh, 2001; 2003). The questions in the survey were clearly worded and reference experiences and activities that students have experienced firsthand. The questions do not prompt any socially desirable responses and do not intrude into the private personal matters of the students (Kuh, 2001). The NSSE provides evidence that allows those interpreting the results to use the data for the intended purpose of institutional-level decision-making (NSSE, 2015). In conjunction with the development of the NSSE instrument, psychometric analyses were conducted following the first administration of the survey in 1999. Five field test analyses took place between 1999 and 2003 with the student population tested ranging from 3,226 students at 12 institutions in spring, 1999, to 122,584 students at 427 institutions in spring 2003 (Kuh, 2004).

Several research studies support the validity of the NSSE results in relation to measuring various populations of student's engagement in effective educational practices (Pascarella, Seifert, & Blaich, 2010; Kuh, 2009; Harper, Carini, Bridges, & Hayek, 2004) and deep approaches to student learning (Laird et al., 2005; 2008; Mayhew et al., 2012; Pascarella et al., 2009).

Reliability refers to the consistency of the measurement. Cronbach's α is a tool used to measure the internal consistency of a group of items. Cronbach's α ranges in value between zero and one with values closer to one indicating higher internal consistency and values closer to zero indicating lower internal consistency (NSSE, 2011). George & Mallery (2003) provided the following techniques when assessing Cronbach's α , $\alpha \geq .9$ – Excellent, $\alpha \geq .8$ – Good, $\alpha \geq .7$ – Acceptable, $\alpha \geq .6$ – Questionable, $\alpha \geq .5$ – Poor, $\alpha < .5$ – Unacceptable.

The internal consistency of the five NSSE Benchmarks is reported annually as part of NSSE's Psychometric Portfolio in order to indicate the quality of the NSSE data. The stipulation of reporting Cronbach's α for Likert-type scales was further explained in a report presented by Joseph A. Gliem and Rosemary R. Gliem (2003). Gliem and Gliem (2003) concluded,

When using Likert-type scales it is imperative to calculate and report Cronbach's α coefficient for internal consistency reliability for any scales or subscales one may be using. The analysis of the data then must use these summated scales or subscales and not individual items. If one does otherwise, the reliability of the items is at best probably low and at worst unknown. Cronbach's α does not provide reliability estimates for single items. (p. 88)

For the purpose of this study, Cronbach's α was calculated for each of the NSSE Benchmarks and Deep Learning scales for first-year (FYG) and senior (SG) students. For first-

year students, the Level of Academic Challenge subscale consisted of 11 items ($\alpha = .719$), the Active and Collaborative Learning subscale consisted of 7 items ($\alpha = .723$), the Student-Faculty Interaction subscale consisted of 6 items ($\alpha = .754$), the Enriching Educational Experiences subscale consisted of 12 items ($\alpha = .587$), and the Supportive Campus Environment subscale consisted of 6 items ($\alpha = .765$). Cronbach's α for the 4 Higher-Order Learning, 5 Integrative Learning, and 3 Reflective Learning items were .823, .713, and .775, respectively.

For senior students, the Level of Academic Challenge subscale consisted of 11 items ($\alpha = .738$) the Active and Collaborative Learning subscale consisted of 7 items ($\alpha = .639$), the Student-Faculty Interaction subscale consisted of 6 items ($\alpha = .757$), the Enriching Educational Experiences subscale consisted of 12 items ($\alpha = .586$), and the Supportive Campus Environment subscale consisted of 6 items ($\alpha = .773$). Cronbach's α for the 4 Higher-Order Learning, 5 Integrative Learning, and 3 Reflective Learning items were .813, .715, and .792, respectively.

The reliability results were similar to the results reported in the 2010 NSSE Internal Consistency evaluation (NSSE, 2011). The results for first-year students suggested a high degree of internal consistency for four of the five NSSE Benchmarks: Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, and Supportive Campus Environment. The Cronbach's α for Enriching Educational Experiences was lower, indicating the use of this benchmark for the first-year student sample should be performed with caution. For senior students, the results suggested a high degree of internal consistency for three of the five NSSE Benchmarks: Level of Academic Challenge, Student-Faculty Interaction, and Supportive Campus Environment. The Cronbach's α for Active and Collaborative Learning and Enriching Educational Experiences were lower, indicating the use of these benchmarks for evaluation of the senior student sample should be performed with caution.

The Benchmarks for Effective Educational Practice and Deep Learning Scales measured by the NSSE have been found to be useful measures for growth in preferred educational outcomes such as critical thinking, moral reasoning, social awareness and effectiveness, personal wellbeing, and a positive stance towards academic activities (Pascarella, et al., 2010). When interpreting the NSSE Benchmark scores, individual student performance typically varies more within institutions than between institutions (NSSE, 2015). Due to attrition during college, the results for first-year and senior students should be generalized separately within the parameters of when the survey was taken. Moreover, it is also important to note that self-selection by students should be taken into consideration when generalizing results to the experiences of all student-athletes and non-athletes at NCAA Division I institutions.

Summary

This chapter addressed the research design of the study, which involved a secondary analysis of data collected from first-year and senior students at NCAA Division I institutions who participated in the 2010 administration of the NSSE *College Student Report*. For the purpose of the study, the NSSE was used as an instrument to better understand the experiences of undergraduate students in college. The sample of approximately 24,000 respondents (student-athlete and non-athlete, first-year and seniors) was divided into two groups (first-year and seniors). Subsequently, stratified random sampling technique was used for first-year and senior students in order to obtain a representative sample of the three student groups (high-profile, low-profile, and general population). Using the three student groups, MANOVA analyses were performed to test for mean differences. *Post hoc* analyses, including item analyses, were used to further investigate the mean differences. The limitations to the study were explained and the validity, reliability, and generalizability of the NSSE were discussed.

CHAPTER IV

FINDINGS

The primary purpose of this study was to report on National Collegiate Athletics Association (NCAA) Division I first-year and senior high-profile student-athletes' engagement in college, both in and out of the classroom, and compare those findings with those of low-profile student-athletes and the general student population. The study focused on the importance of engagement in effective educational practices and deep learning approaches as measured by the National Survey of Student Engagement (NSSE). The study sought to identify the important differences in engagement experiences and deep learning for first-year and senior student-athletes in high-profile sports versus other student populations.

This chapter presented a test of the research questions through several multivariate analyses of variance (MANOVAs) performed on data for the first-year and senior students who participated in the 2010 administration of the NSSE *College Student Report*. The means, standard deviations and post hoc results of the analysis (where applicable) were included with regard to student engagement in effective educational practices and deep learning approaches.

Research Questions

In this dissertation, the following research questions were examined:

RQ1: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ2: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

RQ3: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ4: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

Results

A one-way multivariate analysis of variance (MANOVA) was conducted on data retrieved from the 2010 administration of the NSSE *College Student Report* in order to determine the effect of the five Benchmarks of Effective Educational Practice (Level of Academic Challenge (*LAC*), Active and Collaborative Learning (*ACL*), Student-Faculty Interaction (*SFI*), Enriching Educational Experiences (*EEE*), and Supportive Campus Environment (*SCE*)), and the three Deep Learning Scales (Higher-Order Learning (*HL*), Integrative Learning (*IL*), Reflective Learning (*RL*)), on three student groups (high-profile, low-profile, and general student population). Analyses of individual survey items were included *post hoc* when statistical significance was found in overall comparison as guided by the original NSSE conceptual framework (Kuh, 2003).

First-Year Students. In accordance with research questions 1 and 2, a MANOVA was conducted to examine the relationship between first-year students and the five Benchmarks of Effective Educational Practice and three Deep Learning Scales. For first-year students, the Box's *M* (88.78) was not significant ($p = .106$, $\alpha = .001$), which indicated a lack of evidence that the homogeneity of variance-covariance matrix assumption was violated. No univariate or multivariate outliers were evident and MANOVA was considered to be an appropriate analysis technique. Using an alpha level of .05, the multivariate main effect was significant, Wilks' $\lambda =$

.932 ($F_{(20, 1300)} = 2.91, p < .001, \eta^2 = .035$). See Chapter III, pg. 42 for further explanation of the scaling used to interpret η^2 .

This significant F indicates that there are mean differences among the Benchmarks of Effective Educational Practice and Deep Learning Scales on a linear combination of the eight dependent variables for first-year students. The partial η^2 was small at .035, indicating that 3.5% of multivariate variance of the dependent variables was associated with the student group. Table 5 presents the means and standard deviations of the dependent variables of the NSSE Benchmark Indicators and Deep Learning Scales for first-year students.

Table 5

Means and Standard Deviations of NSSE Benchmark Indicators and Deep Learning Scales for First-Year Students.

Student Type	FYG1		FYG2		FYG3	
	High-Profile		Low-Profile		General Population	
DV	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
LAC	53.3	13.9	55.3	13.5	55.9	13.8
ACL	46.8	18.7	43.4	16.8	43.8	16.8
SFI	41.0	21.8	36.8	18.2	35.0	17.8
EEE	31.5	16.7	31.0	11.7	29.4	13.3
SCE	61.4	18.3	64.9	19.0	64.1	17.7
HL	66.5	22.0	68.1	23.4	69.8	21.8
IL	55.3	19.6	53.9	19.4	55.6	18.4
RL	58.8	23.8	60.9	23.1	60.8	23.0

Note. $n = 220$ for each dependent variable (*LAC* = Level of Academic Challenge, *ACL* = Active and Collaborative Learning, *SFI* = Student-Faculty Interaction, *EEE* = Enriching Educational Experiences, *SCE* = Supportive Campus Environment, *HL* = Higher-Order Learning, *IL* = Interactive Learning, *RL* = Reflective Learning).

The range of scores was 0-100 (NSSE, 2010).

Given the significance of the initial MANOVA test, the univariate main effects were examined at the significance level .05. The Levene’s test of equality of error variances assumption ($p > .05$) was met for six of the eight dependent variables (*LAC, ACL, SCE, HL IL, RL*). For *SFI* and *EEE*, $p = .013$ and $p = .039$, respectively, thus rejecting the null hypothesis that the groups have equal variance. Based on the univariate test, *SFI* score was significantly different for the three student groups with small effect size ($F_{(2, 657)} = 5.68, p = .004, \eta^2 = .017$), however all other dependent variables, including the remaining four benchmarks and three deep learning scales, were not significant.

Due to concerns with the results of the Levene’s Test for *SFI* and *EEE*, the conservative Tukey’s HSD *post hoc* test was used. The results revealed that mean scores regarding interactions with faculty (*SFI*) for high-profile student-athletes were significantly greater than the general student population, $p = .003$. Furthermore, Cohen’s *d* effect size value ($d = .31$) indicated a small practical significance for differences between high-profile student-athletes and the general student population for *SFI*.

Item Analysis. The significant interaction between student group and *SFI* was further examined by performing a MANOVA using the six items on the *SFI* scale as dependent variables. The NSSE Benchmark Indicators and Deep Learning Scales ranged from 0-100. However, for the purpose of domain comparison in item analysis, the item scales for each benchmark were adjusted and scaled by 42 (the number of questions in the *College Student Report*). The means and standard deviations of the dependent variables for first-year students are presented in Table 6.

Table 6

Means and Standard Deviations of Student-Faculty Interaction Items for First-Year Students.

Student Type	FYG1	FYG2	FYG3
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DV	High-Profile		Low-Profile		General Population	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
facgrade	2.91	.853	2.73	.880	2.60	.914
facideas	2.10	.963	1.93	.876	1.89	.869
facplans	2.37	.959	2.25	.891	2.24	.882
facfeed	2.82	.813	2.81	.844	2.73	.820
facother	1.89	.951	1.75	.883	1.64	.851
resrch04	2.21	1.01	2.07	.995	2.17	1.01

Note. $n = 220$ for each dependent variable.

The range of scores was adjusted and scaled by 42 (NSSE, 2010).

For first-year students' *SFI*, the Box's *M* (53.77) was not significant ($p = .117$, $\alpha = .001$), which indicated a lack of evidence that the homogeneity of variance-covariance matrix assumption was violated. No univariate or multivariate outliers were evident and MANOVA was considered to be an appropriate analysis technique. Using an alpha level of .05, the multivariate main effect was significant with a small effect size, Wilks' $\lambda = .967$ ($F_{(12, 1304)} = 1.84$, $p < .001$, $\eta^2 = .017$). The Levene's test for homogeneity of variances was met for four of the six dependent variables (*facideas*, *facother*, *facfeed*, *resrch04*), $p > .05$. For *facgrade* and *facplans*, $p = .016$ and $p = .031$, respectively, thus rejecting the null hypothesis that those two groups had equal variance.

Due to concerns with the results of the Levene's Test for *facgrade* and *facplans*, the conservative Tukey's HSD *post hoc* test was used. The univariate main effects were examined at the significance level $p < .05$. The survey items, "Discussed grades or assignments with an instructor (*facgrade*)," ($F_{(2, 657)} = 7.03$, $p = .001$, $\eta^2 = .021$), "Discussed ideas from your readings or classes with faculty members outside of class (*facideas*)," ($F_{(2, 657)} = 3.16$, $p = .043$, $\eta^2 = .010$), and "Worked with faculty members on activities other than coursework (*facother*)," ($F_{(2,$

$F(6, 657) = 3.32, p = .016, \eta^2 = .012$), were significantly different for the three student groups with small effect size. See Chapter III, pg. 42 for further explanation of the scaling used to interpret for η^2 .

For first-year students, Tukey's HSD *post hoc* tests indicated that mean scores for high-profile student-athletes were significantly greater with regard to *facgrade* compared to the general student population ($p = .001$). The Cohen's d effect size value ($d = .35$) for *facgrade* suggested small practical significance. High-profile student-athletes also reported significantly higher mean scores compared to the general student population in regard to discussing ideas from readings or classes with faculty outside of class ($p = .047$) and working with faculty members on activities other than coursework ($p = .012$). Furthermore, Cohen's d effect size values for *facideas* ($d = .23$) and *facother* ($d = .28$) revealed a small practical significance for these items.

Senior Students. Research questions 3 and 4 addressed the engaging experiences and learning of senior students. A MANOVA was conducted to examine the relationship between senior students and the five Benchmarks of Effective Educational Practice and the three Deep Learning Scales. For senior students, the Box's M (65.57) was not significant ($p = .734, \alpha = .001$), and univariate or multivariate outliers were evident, thus a MANOVA using Wilks' λ was considered to be an appropriate analysis technique.

Using an alpha level of .05, the multivariate main effect was significant with a small effect size, Wilks' $\lambda = .909$ ($F_{(26, 1018)} = 3.01, p < .001, \eta^2 = .046$). This significant F indicated that there were significant differences among the Benchmarks of Effective Educational Practice and Deep Learning Scales on a linear combination of the eight dependent variables for senior students. The partial η^2 was small at .046, indicating that 4.6% of variance of the dependent

variables was associated with the student group. The means and standard deviations of the dependent variables for senior students are presented in Table 7.

Table 7

Means and Standard Deviations of NSSE Benchmark Indicators and Deep Learning Variables for Senior Students.

Student Type	SG1		SG2		SG3	
	High-Profile		Low-Profile		General Population	
DV	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
LAC	58.1	13.9	56.7	14.0	55.4	13.9
ACL	51.2	16.2	52.1	15.4	51.7	16.2
SFI	41.5	20.3	43.9	21.2	43.3	20.5
EEE	42.1	18.0	48.8	16.8	42.8	19.0
SCE	60.3	19.4	64.9	17.3	66.2	17.6
HL	74.6	20.8	71.1	21.7	68.8	21.0
IL	59.4	17.6	59.7	19.7	59.3	18.7
RL	61.1	23.0	60.5	22.9	57.9	22.9

Note. $n = 173$ for each dependent variable (*LAC* = Level of Academic Challenge, *ACL* = Active and Collaborative Learning, *SFI* = Student-Faculty Interaction, *EEE* = Enriching Educational Experiences, *SCE* = Supportive Campus Environment, *HL* = Higher-Order Learning, *IL* = Interactive Learning, *RL* = Reflective Learning).

The range of scores was 0-100 (NSSE, 2010).

The Levene's test of equality of error variances assumption was met for all eight factors (*LAC*, *ACL*, *SFI*, *EEE*, *SCE*, *HL*, *IL*, *RL*), $p > .05$, therefore, homogeneity of variance was assumed. Given the significance of the initial test, univariate main effects were examined. *EEE* ($F_{(2, 516)} = 7.28, p = .027, \eta^2 = .027$), *SCE* ($F_{(2, 516)} = 4.98, p = .019, \eta^2 = .019$), and *HL* ($F_{(2, 516)} = 3.27, p = .013, \eta^2 = .013$), were significantly different for the three student groups with small effects, respectively. Univariate results for the other five dependent variables were not significant.

For seniors, Tukey's HSD *post hoc* tests revealed that mean scores measuring *EEE* for low-profile student-athletes were significantly higher when compared to the general student population ($p = .002$), and high-profile student-athletes ($p = .006$). Cohen's d effect size values for the general student population ($d = .39$) and high-profile student-athletes ($d = .33$) for *EEE* indicated a small-medium practical significance in overall engagement in enriching educational experiences. Furthermore, mean scores for high-profile student-athletes were significantly higher than the general student population for *SCE* ($p = .008$), and significantly lower than the general student population for *HL* ($p = .031$). Cohen's d effect size value ($d = .32$) for *SCE* and ($d = .28$) for *HL* suggested a small practical significance for each item.

Item Analysis. The significant interactions between student group and *EEE*, *SCE*, and *HL*, were further examined by performing three separate MANOVAs using the individual survey items of the each scale as dependent variables. Table 8 reveals the means and standard deviations of the dependent variables for senior students.

Table 8

Means and Standard Deviations of Enriching Educational Experiences, Supportive Campus Environment and Higher-Order Learning Items for Senior Students.

Student Type		SG1		SG2		SG3	
Factor	DV	High-Profile		Low-Profile		General Population	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>EEE</i>	diffstu2	2.85	.965	2.77	.924	2.61	.956
	divrstud	2.74	1.00	2.82	.894	2.75	.967
	envdivrs	2.61	.968	2.63	.953	2.50	.980
	cocurr01	5.15	2.34	4.99	2.07	2.16	1.48
	itacadem	2.68	.958	2.79	.950	2.82	1.01
	intern04	3.15	.934	3.30	.960	3.16	1.04
	volIntr04	3.45	.943	3.61	.846	3.37	1.02
	lncom04	2.50	1.02	2.47	1.08	2.48	1.02
	forlng04	2.72	1.03	2.95	1.09	2.92	1.08
	stdabr04	2.08	.707	2.28	.919	2.27	.896
	indstd04	2.25	.911	2.29	.902	2.35	.963
snrx04	2.79	.948	3.03	.994	2.99	.970	
<i>SCE</i>	envsocal	2.56	.917	2.49	.880	2.32	.988
	envsuprt	3.20	.731	3.14	.721	2.98	.814
	envnacad	2.47	.919	2.19	.936	2.08	.940
	envstu	5.80	1.20	5.96	1.19	5.57	1.30
	envfac	5.43	1.29	5.82	1.15	5.57	1.21
	envadm	5.12	1.49	4.95	1.54	4.83	1.53
<i>HL</i>	analyze	3.15	.716	3.31	.712	3.37	.688
	synthesz	2.94	.836	3.03	.845	3.17	.803
	evaluate	2.98	.835	2.89	.852	3.09	.827
	applying	3.20	.760	3.30	.850	3.32	.792

Note. $n = 173$ for each dependent variable.

Enriching Educational Experiences. The *EEE* benchmark was comprised of a twelve-item scale used to measure the extent of interaction students have with students from differing backgrounds, the use of electronic technology and participation in various activities outside the classroom such as internships, community service, and study abroad. For senior students' *EEE*, the Box's *M* (192.05) was not significant ($p = .052$, $\alpha = .001$), which indicated a lack of evidence that the homogeneity of variance-covariance matrix assumption was violated. No univariate or multivariate outliers were evident and MANOVA was considered to be an appropriate analysis technique. Using an alpha level of .05, the multivariate main effect was significant with large effect size, Wilks' $\lambda = .640$ ($F_{(24, 1010)} = 10.50$, $p < .001$, $\eta^2 = .207$).

Given the significance of the overall test, the univariate main effects were examined at .05. The Levene's test of equality of error variances assumption was met for nine of the eleven dependent variables (*diffstu2*, *divrstud*, *envdivrs*, *itacadem*, *intern04*, *lrncom04*, *stdabr04*, *indstd04*, *snrx04*). For *stdabr04* and *volntr04*, $p = .000$ and $p = .001$, respectively, thus rejecting the null hypothesis that those two groups had equal variance.

Due to concerns with the results of the Levene's Test for *stdabr04* and *volntr04*, the conservative Tukey's HSD *post hoc* test was used. The univariate main effects were examined at the significance level $p < .05$. The items *cocurr01* ($F_{(2, 516)} = 123.00$, $p = .000$, $\eta^2 = .323$), *volntr04* ($F_{(2, 516)} = 3.04$, $p = .049$, $\eta^2 = .012$), *stdabr04* ($F_{(2, 516)} = 3.31$, $p = .037$, $\eta^2 = .013$), and *snrx04* ($F_{(2, 516)} = 3.05$, $p = .048$, $\eta^2 = .012$), were significantly different for the three student groups. *cocurr01* was significant with large effect size where as *volntr04*, *stdabr04*, and *snrx04* had small effect size.

For seniors, Tukey's HSD *post hoc* tests revealed that high-profile student-athletes and low-profile student-athletes reported significantly higher mean scores than the general student

population ($p < .001$, $p < .001$, respectively) regarding hours spent per week participating in co-curricular activities, including intercollegiate sports (*cocurr01*). The Cohen's d effect size value for high-profile ($d = 1.56$) and low-profile ($d = 1.59$) student-athletes revealed a large practical significance. Mean scores for low-profile student-athletes were significantly greater regarding community service or volunteer work compared to the general student population ($p = .043$). The Cohen's d effect size ($d = .26$) for *voluntr04* indicated a small practical significance.

Supportive Campus Environment. Using a six-item scale, the *SCE* benchmark was used to measure the degree students believe the institution aids them in their academic and social success and encourages supportive relationships between students and peers, faculty, and other administrative personnel on campus. For senior students' *SCE*, the Box's M (56.67) was not significant ($p = .076$, $\alpha = .001$), which indicated a lack of evidence that the homogeneity of variance-covariance matrix assumption was violated. No univariate or multivariate outliers were evident and MANOVA was considered to be an appropriate analysis technique. Using an alpha level of .05, the multivariate main effect was significant with small effect, Wilks' $\lambda = .916$ ($F_{(12, 1022)} = 3.82$, $p < .001$, $\eta^2 = .043$). The Levene's test of equality of error variances assumption was met for all six factors (*envsocal*, *envsuprt*, *envnacad*, *envstu*, *envfac*, *envadm*), $p > .05$.

Given the significance of the overall test, the univariate main effects were examined at .05. The items *envstu* ($F_{(2, 516)} = 4.34$, $p = .013$, $\eta^2 = .017$), *envfac* ($F_{(2, 516)} = 4.36$, $p = .013$, $\eta^2 = .017$), *envnacad* ($F_{(2, 516)} = 8.39$, $p = .000$, $\eta^2 = .032$), and *envsuprt* ($F_{(2, 516)} = 4.15$, $p = .016$, $\eta^2 = .016$), were significantly different for the three student groups with small effect. Tukey's HSD *post hoc* tests revealed that mean scores measuring relationships with other students were significantly greater for low-profile student-athletes compared to the general student population, $p = .010$. The Cohen's d effect size value for *envstu* ($d = .31$) indicated small practical

significance. Moreover, mean scores for low-profile student-athletes were significantly higher than high-profile student-athletes with regards to relationships with faculty ($p = .010$). Cohen's d effect size value for *envfac* ($d = .32$) revealed small practical significance. High-profile student-athletes reported significantly higher mean scores than the general student population, ($p < .001$), and low-profile student-athletes ($p = .013$), for institutional support of non-academic responsibilities. Cohen's d effect size value for *envnacad* indicated a lack of small practical significance related to low-profile student-athletes ($d = .15$), and small practical significance compared to the general student population ($d = .42$). In addition, high-profile student-athletes reported significantly higher mean scores than the general student population with regards to having the institutional support needed to succeed academically ($p = .016$). Cohen's d effect size value for *envsuprt* ($d = .28$) suggested small practical significance.

Deep Approach: Higher-Order Learning. The Higher-Order Learning Scale used four-items to evaluate the amount students perceive that their coursework encourages progressive critical thinking skills (Laird et al., 2005). For senior students' *SCE*, the Box's M (12.68) was not significant ($p = .896$, $\alpha = .001$), which indicated a lack of evidence that the homogeneity of variance-covariance matrix assumption was violated. No univariate or multivariate outliers were evident and MANOVA was considered to be an appropriate analysis technique. Using an alpha level of .05, the multivariate main effect was significant with large effect, Wilks' $\lambda = .965$ ($F_{(8, 1026)} = 2.27$, $p = .021$, $\eta^2 = .964$). The Levene's test of equality of error variances assumption was met for all four factors (analyze, synthesz,

Given the significance of the overall test, the univariate main effects were examined at .05. The items *analyze* ($F_{(2, 516)} = 4.53$, $p = .011$, $\eta^2 = .017$) and *synthesz* ($F_{(2, 516)} = 3.598$, $p = .028$, $\eta^2 = .014$) were significantly different for the three student groups with small effect.

Tukey's HSD *post hoc* tests indicated that mean scores measuring classroom experiences related to analyzing (*analyze*) and synthesizing (*synthesz*) information were significantly greater for the general student-population compared to high-profile student-athletes ($p = .011$ and $p = .022$, respectively). Cohen's d effect sizes for *analyze* ($d = .31$) and *synthesz* ($d = .28$) student-athletes suggested small practical significance for the relationship between high-profile student-athletes and the general student population. Table 9 provides a summary of the findings of interest from the study ranked by Cohen's d effect size.

Table 9

Summary of findings of interest ranked by effect size ($d = 0.30$ or higher, $p < .05$)

Group	Item	F -test score, p -value	Tukey's HSD Mean Scores Comparison	Effect Size
SG	<i>cocurr01</i>	$F_{(2, 516)} = 123.00,$ $p < .001, \eta^2 = .323$	$\bar{x}_{low\ prof} = 4.99 >$ $\bar{x}_{gen\ pop} = 2.16$	$d = 1.59$
SG	<i>cocurr01</i>	$F_{(2, 516)} = 123.00,$ $p < .001, \eta^2 = .323$	$\bar{x}_{high\ prof} = 5.15 >$ $\bar{x}_{gen\ pop} = 2.16$	$d = 1.56$
SG	<i>envnacad</i>	$F_{(2, 516)} = 8.39,$ $p < .001, \eta^2 = .032$	$\bar{x}_{high\ prof} = 2.47 >$ $\bar{x}_{gen\ pop} = 2.08$	$d = 0.42$
SG	<i>NSSE Benchmark</i> (domain): <i>EEE</i>	$F_{(2, 516)} = 7.28,$ $p = .027, \eta^2 = .027$	$\bar{x}_{low\ prof} = 48.83 >$ $\bar{x}_{gen\ pop} = 42.10$	$d = 0.39$
FYG	<i>facgrade</i>	$F_{(2, 657)} = 7.03,$ $p = .001, \eta^2 = .021$	$\bar{x}_{high\ prof} = 2.91 >$ $\bar{x}_{gen\ pop} = 2.60$	$d = 0.35$
SG	<i>NSSE Benchmark</i> (domain): <i>EEE</i>	$F_{(2, 516)} = 7.28,$ $p = .027, \eta^2 = .027$	$\bar{x}_{low\ prof} = 48.83 >$ $\bar{x}_{high\ prof} = 42.87$	$d = 0.33$
SG	<i>envfac</i>	$F_{(2, 516)} = 4.36,$ $p = .013, \eta^2 = .017$	$\bar{x}_{low\ prof} = 5.82 >$ $\bar{x}_{high\ prof} = 5.43$	$d = 0.32$
SG	<i>NSSE Benchmark</i>	$F_{(2, 516)} = 4.98,$	$\bar{x}_{high\ prof} = 66.20 >$	$d = 0.32$

	(domain): SCE	$p = .019, \eta^2 = .019$	$\bar{x}_{gen pop} = 60.34$	
SG	envstu	$F_{(2, 516)} = 4.34,$ $p = .013, \eta^2 = .017$	$\bar{x}_{low prof} = 5.96 >$ $\bar{x}_{gen pop} = 5.57$	$d = 0.31$
FYG	NSSE Benchmark	$F_{(2, 657)} = 5.68,$	$\bar{x}_{high prof} = 41.04 >$	$d = 0.31$
	(domain): SFI	$p = .004, \eta^2 = .017$	$\bar{x}_{gen pop} = 34.97$	
SG	analyze	$F_{(2, 516)} = 4.528,$ $p = .011, \eta^2 = .017$	$\bar{x}_{gen pop} = 3.37 >$ $\bar{x}_{high prof} = 3.15$	$d = 0.31$

Summary

This chapter presented the results of multivariate analyses of variance (MANOVA) and univariate analyses of variance (ANOVA) performed on data for the first-year and senior students who participated in the 2010 administration of the NSSE *College Student Report*. For first-year students, the *SFI* benchmark was significant for the three student groups (high-profile, low-profile, and general student population) with a small effect size. For senior students, the benchmarks for *EEE*, *SCE*, and the deep learning approach *HL*, were significant for the three student groups with small effect sizes, respectively. *Post hoc* analyses were performed when appropriate and results were presented for further discussion in Chapter V.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The primary purpose of this study was to report on National Collegiate Athletics Association (NCAA) Division I first-year and senior high-profile student-athletes' engagement in college, both in and out of the classroom, and compare those findings with those of low-profile student-athletes and the general student population. The study focused on the importance of engagement in effective educational practices and deep learning approaches as measured by the National Survey of Student Engagement (NSSE). The study sought to identify the important differences in engagement experiences and deep learning for first-year and senior student-athletes in high-profile sports versus other student populations.

This chapter presented an interpretation of the findings from the inferential analyses performed on a sample of first-year and senior students who participated in the 2010 administration of the NSSE *College Student Report*, commonly known as the NSSE survey. The conclusions, implications, and recommendations for further study were also discussed.

Research Questions

In this dissertation, the following research questions were examined:

RQ1: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ2: What is the relationship between first-year student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

RQ3: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to engagement in effective educational practices?

RQ4: What is the relationship between senior student-athletes in high-profile sports, low-profile sports, and non-athletes with regard to the deep learning approaches?

Summary of Findings

In order to understand the relationship between the three student groups and engaging experiences and deep learning, a one-way multivariate analysis of variance (MANOVA) was conducted on data retrieved from the 2010 administration of the NSSE *College Student Report*. The data set was obtained from the NSSE and the two student populations (first-year and senior) were analyzed separately. Stratified random sampling technique was used to assemble the three groups and the resulting samples for first-year ($n = 220$) and senior ($n = 173$) students were analyzed. Table 10 lists the top findings in the study based on Cohen's d effect sizes used to measure the practical significance of the findings (Cohen, 1992).

Table 10

Summary of findings of interest ranked by effect size ($d = .30$ or higher, $p < .05$)

Effect Size	Group	Item	F -test score, p -value	Tukey's HSD Mean Scores Comparison
$d = 1.59$	SG	<i>cocurr01</i>	$F_{(2, 516)} = 123.00,$ $p < .001, \eta^2 = .323$	$\bar{x}_{low\ prof} = 4.99 >$ $\bar{x}_{gen\ pop} = 2.16$
$d = 1.56$	SG	<i>cocurr01</i>	$F_{(2, 516)} = 123.00,$ $p < .001, \eta^2 = .323$	$\bar{x}_{high\ prof} = 5.15 >$ $\bar{x}_{gen\ pop} = 2.16$
$d = .42$	SG	<i>envnacad</i>	$F_{(2, 516)} = 8.39,$ $p < .001, \eta^2 = .032$	$\bar{x}_{high\ prof} = 2.47 >$ $\bar{x}_{gen\ pop} = 2.08$

$d = .39$	SG	NSSE Benchmark (domain): EEE	$F_{(2, 516)} = 7.28,$ $p = .027, \eta^2 = .027$	$\bar{x}_{low\ prof} = 48.83 >$ $\bar{x}_{gen\ pop} = 42.10$
$d = .35$	FYG	facgrade	$F_{(2, 657)} = 7.03,$ $p = .001, \eta^2 = .021$	$\bar{x}_{high\ prof} = 2.91 >$ $\bar{x}_{gen\ pop} = 2.60$
$d = .33$	SG	NSSE Benchmark (domain): EEE	$F_{(2, 516)} = 7.28,$ $p = .027, \eta^2 = .027$	$\bar{x}_{low\ prof} = 48.83 >$ $\bar{x}_{high\ prof} = 42.87$
$d = .32$	SG	envfac	$F_{(2, 516)} = 4.36,$ $p = .013, \eta^2 = .017$	$\bar{x}_{low\ prof} = 5.82 >$ $\bar{x}_{high\ prof} = 5.43$
$d = .32$	SG	NSSE Benchmark (domain): SCE	$F_{(2, 516)} = 4.98,$ $p = .019, \eta^2 = .019$	$\bar{x}_{high\ prof} = 66.20 >$ $\bar{x}_{gen\ pop} = 60.34$
$d = .31$	SG	envstu	$F_{(2, 516)} = 4.34,$ $p = .013, \eta^2 = .017$	$\bar{x}_{low\ prof} = 5.96 >$ $\bar{x}_{gen\ pop} = 5.57$
$d = .31$	FYG	NSSE Benchmark (domain): SFI	$F_{(2, 657)} = 5.68,$ $p = .004, \eta^2 = .017$	$\bar{x}_{high\ prof} = 41.04 >$ $\bar{x}_{gen\ pop} = 34.97$
$d = .31$	SG	analyze	$F_{(2, 516)} = 4.528,$ $p = .011, \eta^2 = .017$	$\bar{x}_{gen\ pop} = 3.37 >$ $\bar{x}_{high\ prof} = 3.15$

Cocurr01 encompassed the extent to which students were involved in campus organizations, committees, and sports during college. Question 9 in the 2010 NSSE *College Student Report* stated, “About how many hours do you spend in a typical 7-day week doing each of the following?” For the *cocurr01* item, students responded with the total number of hours they “participated in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)” on an eight-item scale ranging from (1) 0 hours per week to (8) more than 30 hours. The large effect size for both high-profile and low-profile senior student-athletes indicated that in this study, student-athlete seniors engaged in 16-20 hours of co-curricular activities, on average, versus the general student population who reported spending an average of 1-5 hours a week. Bylaw 17.1.6.1 in the NCAA

Division I Manual states, “A student-athlete’s participation in countable athletically related activities shall be limited to a maximum of four hours per day and 20 hours per week” (NCAA, 2014, p. 230). The findings for *cocurr01* reported in Table 10 are congruent with those in a study by Aries and Richard (1999) who found that senior student-athletes devoted significantly more time to extracurricular activities than non-athletes, although the Aires and Richard study was limited to students at a Division III college.

The NSSE benchmark for a Supportive Campus Environment (*SCE*) was used to evaluate a student’s satisfaction and his or her perception of the campus environment, including gauging the working and social relationships among diverse groups throughout campus. There was a small effect size for three (*envacad*, *envfac*, *envstu*) of the six *SCE* items for senior students. Question 10 in the 2010 NSSE *College Student Report* stated, “To what extent does your institution emphasize each of the following?” The item *envacad* measured how a student perceived the institutional emphasis on “helping you cope with your non-academic responsibilities (work, family, etc.).” Similar to the studies performed by Umbach and colleagues (2006) and Williams and colleagues (2006), the Division I student-athletes in this study perceived the institution supported and assisted them in coping with their personal responsibilities. The study found additional differences between high-profile senior student-athletes and the general student population for *envacad*, indicating that high-profile student-athletes were more satisfied with the institutional support they received. As noted in Chapter II, support services specifically for Division I student-athletes have grown exponentially in recent years (Wolverton, 2008). These support services within athletic departments include academic counselors, tutors, mentors and other resources that work in collaboration with the faculty and

campus administration in an effort to provide a positive and controlled overall college experience for the student-athletes (Carodine et al., 2001).

Question 8 in the 2010 NSSE *College Student Report* asked the respondent to, “Select the circle that best represents the quality of your relationships with people at your institutions?” Within question 8, *envstu* involved “relationships with other students” and *envfac* related to “relationships with faculty members.” Though few studies have looked specifically at low-profile student-athletes, their preparedness for college, and acumen for high achievement and positive relationships, the findings for *envstu* indicated that these low-profile senior student-athletes were more satisfied than high-profile senior student-athletes and the general student population with the quality of their relationships with other students. Interestingly, there was not a significant difference in the means of high-profile senior student-athletes versus the general student population regarding the relationships they have the other students. The results for *envfac* are discussed later in this section as they relate to all student-faculty interactions.

The Enriching Educational Experiences (*EEE*) benchmark measured engagement in learning opportunities both in and out of the classroom including, but not limited, to technology use in the classroom, peer collaboration, internships, community service, and senior capstone courses (NSSE, n.d., p. 2). For senior students, low-profile student-athletes reported greater satisfaction with the diversity of their learning opportunities and experiences compared to the general student population and high-profile student-athletes. While not applicable to seniors, or differentiated by sport type, these results are generally supported by the Umbach and colleagues (2006) study in which first-year student-athletes reported having more diverse experiences than the general student population. Interestingly, although not applicable to seniors, the Williams and colleagues (2006) study revealed that high-profile first-year student-athletes might feel less

satisfied with their educational experiences. Unlike the previous studies, the findings of this study, comparing three student groups, suggest that low-profile senior student-athletes have a more enriching overall experience during college than high-profile student-athletes and the general student population.

The NSSE benchmark for Student-Faculty Interaction (*SFI*) measured how often students discussed grades, projects, and other ideas with faculty and advisors, both in and out of the classroom (NSSE, n.d., p. 2). For first-year students, the *SFI* mean score differences were significant for all three student groups. *Post hoc* analyses revealed high-profile first-year student-athlete's scores for interactions with faculty were significantly greater than the general student population. The findings for *SFI* were commensurate with the previous research of Umbach and colleagues (2006) and Williams and colleagues (2006) on first-year students. Differentiating by sport type, Williams and colleagues (2006) found that high-profile first-year student-athletes reported more frequent interactions with faculty than their non-athlete peers.

According to findings from this study, student-athletes engaged with campus personnel who they consider to be “faculty members,” although it is unlikely that this is a typical classroom faculty member in a traditional sense. A qualitative study related to who first-year student-athletes consider as faculty members is suggested to further explore the student-athletes' perceptions. The substantial academic support available to student-athletes including athletic department tutors, mentors, team-assigned graduate assistants, and learning specialists, may all be perceived as faculty members from the perspective of the student-athlete.

Item analysis of first-year students using the six-item *SFI* scale revealed that mean scores for three items —*facgrade*, *facideas*, and *facother*— were significantly different for the three student groups. Question 1 in the NSSE *College Student Report* stated, “In your experience at

your institution during the school year, about how often have you done each of the following?”

The only item with a small practical significance, *facgrade*, allowed students to share how often they “discussed grades or assignments with an instructor” on a four-item scale ranging from (1) never to (4) very. The finding suggested that, due to their busy schedules and team travel, high-profile student-athletes must discuss matters related to grades and assignments with their instructors in order to keep pace in their courses. Survey items *facideas* and *facother* did not meet the effect size criteria to be reported here.

Moreover, high-profile first-year and senior student-athletes reported lower satisfaction scores than low-profile student-athletes regarding their relationships with faculty members. This finding is contrary to the studies performed on student-athletes related to student-faculty interaction (Umbach et al., 2006) and could be due to a more negative faculty perception of high-profile student-athletes (Engstrom et al., 2005). There is a distinct difference between frequency of interaction and the quality of a relationship. Thus, further research should be conducted exploring the quality of high-profile student athletes’ relationships with faculty and faculty “proxies.”

Higher-Order Learning (*HL*) was measured to evaluate the amount a student believed that his or her coursework encouraged progressive critical thinking skills. Question 2 from the 2010 NSSE *College Student Report* stated, “During the current school year, how much has your coursework emphasized the following mental activities?” The *analyze* item allowed students to share how much their coursework emphasized “analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components” on a four-item scale ranging from (1) very little to (4) very much. Some high-profile senior student-athletes reported that their coursework might not have emphasized critical

thinking skills. This finding suggested that high-profile student-athletes might feel that simply passing classes to maintain their athletic eligibility is of greater importance than challenging themselves cognitively in their coursework. Because this is the first study to report on deep learning in student-athlete seniors using the NSSE, the findings can be used to provide a benchmark of how high-profile student-athletes perceive the intellectual challenges of college.

Conclusion

This study sought to determine the relationship between engaging experiences and deep learning for student-athletes and the general student population. Several conclusions can be made from the findings which were discussed separately for first-year and senior students.

First-Year Students. Interestingly, though first year student-athletes were divided into two groups (low-profile and high-profile), findings from this study support previous research (Kuh et al., 2006; Umbach et al., 2006). Consistent with the previous research, first-year student-athletes in this study were as engaged, if not more engaged, in on-campus activities and interactions than the general student population. Though previous research reported negative faculty attitudes towards student-athletes in high-profile sports (Engstrom et al., 2005), item analysis of the *SFI* benchmark revealed first-year student-athletes in high-profile sports interacted with faculty more frequently than the general student population.

These findings about first-year student-athletes are encouraging because interactions with faculty are strongly related to overall student satisfaction in the college experience (Umbach & Wawrzynsky, 2005). With the microscope on high-profile student-athletes at Division I institutions, the institutional control and expectations for the high-profile student athlete may require class attendance and interactions with academic support staff. While interactions with faculty are important, it is the quality of the interactions high-profile student-athletes have with

faculty, not just frequency, that should be considered when shedding light on the impact of these experiences (Comeaux & Harrison, 2007).

Another positive finding from this study was that high-profile first-year student-athletes' responded that they scored higher than their non-athlete peers on the following survey questions, "Discussed grades or assignments with an instructor," "Discussed ideas from your readings or classes with faculty members outside of class," and "Worked with faculty members on activities other than coursework." These findings provide insight about the nature of the strong relationship first-year student-athletes in high-profile sports have with faculty.

Furthermore, no significant differences in mean scores were found for first-year student-athletes regarding their use of deep approaches to learning both in and out of the classroom. Because this study was the first to use the NSSE to determine the relationship between deep approaches to learning for student-athletes when compared to the general student population, the findings can serve an initial exploration of first-year student-athlete deep learning and cognitive development.

Senior Students. Previous studies that used NSSE data to report student-athlete engagement in effective educational practices have excluded seniors from their analyses, perhaps due to attrition problems (Umbach et al., 2006; Williams et al., 2006). A previous study performed by Potuto & O'Hanlon (2007) on Division I senior student-athletes suggested that, overall, Division I senior student-athletes were satisfied with their college experience. In this study, low-profile senior student-athletes reported being more engaged in developmental learning experiences when compared to their non-athlete peers. Moreover, regarding co-curricular activities, the significantly higher scores for low-profile student-athletes for time devoted to performing community service and other volunteer work, supports the claim that they

are more engaged in campus activities than either high-profile student-athletes or the general student population. Since the level of media coverage of high-profile sports entails greater exposure for high-profile student-athletes, low-profile student-athletes may have more opportunities to be intentional with their time, including co-curricular activities, while competing and completing their coursework.

Additionally, student-athletes in low-profile sports reported significantly higher mean scores related to their relationships with the general student population. As mentioned in the discussion of the results for first-year students, this finding may have derived from the relationships that student-athletes in low-profile sports are able to garner during their time outside of practice, study hall, and competitions. However, unlike the findings for first-year students, the deep learning approach of higher-order learning scores were significantly different between the three senior student groups. Further analysis showed that high-profile student-athletes reported significantly lower scores with regards to *HL* experiences. Because much attention is placed on student attrition and the engagement of first-year students, this findings indicates less cognitive challenge for senior student-athletes. This was the only finding in the study that supported the cultural stereotype amplified by the media of the academically disengaged student-athlete (Engstrom & Sedlacek, 1991) though the practical significance was small. The remainder of the findings from the study for both first-year and senior student-athletes were generally positive and may be of interest to researchers considering further study in this area.

Limitations

As previously discussed in Chapter I, this study is not without limitations. First, self-reported data can be affected by the ability of the respondents to provide honest and accurate

information in their responses. Since the study used a national survey for the evaluation of engagement, it is not possible to assess the results for students across institutions. Participants were randomly selected so information regarding students who did not participate is not known. Furthermore, this study only sought to examine the relationships between first-year and senior students in three student groups. Pre-college factors such as socioeconomic status and standardized tests scored were not used for the purpose of this study.

Additional limitations arise from the sample size. Though stratified random sampling techniques were used to create a sample proportionate to the student-athlete population demographic, the results should be considered preliminary and suggestive of student-athlete engagement and learning. Despite these limitations, this research serves as a valuable contribution to the literature related to the student-athlete experience.

Implications

Overall, the findings from this study are consistent with previous studies performed comparing student-athletes to the general student population. Despite the often negative perceptions of student-athletes with regards to their engagement on campus, this research provides further empirical evidence that both first-year and senior student-athletes devote substantial time and efforts in educationally purposeful activities. This study provided an opportunity to better understand the unique differing experiences of the student-athlete population by separating high-profile and low-profile student-athletes. With billions of dollars being poured into Division I athletic programs, an accountability model should be developed to justify the value of a college degree. The positive results from this study should be an encouragement to higher education administrators and athletics department staff; however, there are more ways to improve the student-athlete experience.

The more years a student is in school, the better the opportunity to effectively understand their experiences. By studying senior student-athletes, we are able to better understand their perception of a supportive and engaging campus environment. The results of this study indicated that both low- and high-profile senior student-athletes had positive perceptions of their campus environment. The positive results for senior low-profile student-athletes regarding their service learning and community outreach could be used as a model for those who work with student-athletes in other sports. Despite these positive results related to high-profile senior student-athlete engagement, low scores for Higher-Order Learning revealed that these student-athletes do not feel their experiences throughout college have enhanced their critical thinking skills. As few studies have researched the engagement of senior student-athletes, particularly Division I student-athletes, further research using additional learning scales is necessary to understand these student-athletes campus experiences throughout college.

The results from this study provide empirical data to inform practice and aid higher education administrators, particularly faculty, advisors, and athletic administrators in understanding more about the unique engaging experiences and learning approaches of student-athletes. With this knowledge, there is opportunity to further develop curricula and programming to support the holistic development of first year and senior student-athletes. For first-year student-athletes, opportunities to actively connect with faculty members in majors of interest to form mentor relationships would create a tremendous platform for transparency and open communication. The support of the athletics administration, particularly coaching staffs, is necessary in order to connect and evoke a culture change within the high-profile student-athlete population. Establishing a faculty/student-athlete mentor relationship could lay a strong foundation for developmental learning improvement in high-profile student-athletes, bridging the

gaps shown in this study. The results from this study should be shared and used as a baseline for student-athlete development programs on NCAA Division I campuses nationwide.

Recommendations for Future Research

Future research on the student-athlete population should be performed in order to gain a deeper understanding of their unique experiences. Qualitative studies related to the student experience could be used to obtain more in-depth perspectives of student-athletes' attitudes and perceptions of their engaging experiences, particularly related to student-faculty interaction. In order to perform a qualitative study on this exclusive student population (student-athletes), a relationship with an NCAA Division I conference office should be formed with integrity maintained. Furthermore, a mixed-method approach could be used utilizing the *NSSE College Student Report* and focus group interviews of student-athletes from institutions within the conference. This approach may prove effective in developing themes in student-athlete engagement and deep learning approaches. Moreover, qualitative research may ensure that the sample of participants are representative of the population under study. Extra emphasis on senior student-athlete data and feedback allows for deeper understanding of their experiences throughout college.

Moreover, for the research to continually be used to inform practice and transform policy, longitudinal studies using NSSE data should be performed and cross-compared with other national data sources related to student-athlete engagement such as the Basic Academic Skills Study (BASS). Since student engagement varies more within institutions than between institutions (Kuh et al, 2006), further research on a national scale over the course of several years could provide more reliable findings and reveal patterns in student learning and engagement for student-athletes.

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APPENDIX A

Sport	American Indian/ Alaskan Native		Asian		Black/ African American		Hispanic/ Latino		Native Hawaiian/ Pacific Islander		Other		Two or More Races		White, Non-Hispanic	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
2009-10 STUDENT-ATHLETE RACE / ETHNICITY PERCENTAGES FOR DIVISION I																
Archery	0.0	0.0	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Badminton	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Baseball	0.5	N/A	1.0	N/A	5.6	N/A	5.8	N/A	0.2	N/A	2.6	N/A	0.8	N/A	83.4	N/A
Basketball	0.3	0.3	0.5	1.2	60.9	51.0	1.9	1.5	0.1	0.4	4.6	4.1	1.2	1.3	30.5	40.2
Bowling	0.0	0.4	N/A	1.5	0.0	40.6	0.0	4.1	N/A	0.4	0.0	3.8	0.0	1.1	0.0	48.1
Cross Country	0.5	0.5	1.2	1.2	10.1	12.8	6.0	5.2	0.1	0.1	5.1	4.4	0.7	0.7	76.2	75.0
Equestrian	0.0	0.8	N/A	0.9	0.0	0.5	0.0	1.9	N/A	0.0	0.0	2.3	0.0	0.7	0.0	92.8
Fencing	1.1	0.8	10.2	9.0	5.1	6.5	4.8	7.8	0.3	0.3	11.2	12.8	0.8	0.8	66.6	62.2
Field Hockey	N/A	0.2	N/A	1.9	N/A	1.4	N/A	2.1	N/A	0.1	N/A	6.8	N/A	1.0	N/A	86.5
Football	0.4	N/A	1.0	N/A	45.8	N/A	2.4	N/A	0.9	N/A	2.9	N/A	1.3	N/A	45.1	N/A
I-A	0.4	N/A	1.3	N/A	47.4	N/A	2.4	N/A	1.3	N/A	2.9	N/A	1.2	N/A	43.0	N/A
I-AA	0.4	N/A	0.6	N/A	43.9	N/A	2.5	N/A	0.5	N/A	3.0	N/A	1.5	N/A	47.6	N/A
Golf	0.3	0.5	4.0	7.3	3.1	3.9	3.0	4.4	0.2	0.2	6.0	7.8	0.3	0.9	83.0	75.0
Gymnastics	0.3	0.3	6.8	6.7	4.8	6.7	6.4	3.5	1.0	0.2	5.5	4.5	0.3	1.5	74.9	76.6
Ice Hockey	0.1	0.6	0.7	1.9	0.7	0.5	0.9	0.5	0.0	0.0	14.4	13.1	0.2	0.1	82.9	83.2
Lacrosse	0.4	0.2	0.7	1.1	1.9	2.3	1.3	1.6	0.1	0.0	5.0	4.4	0.4	0.5	90.2	90.0
Rifle	0.0	0.0	4.9	2.2	0.7	0.7	2.1	3.6	0.0	0.0	1.4	2.2	0.0	0.7	90.8	90.5
Rowing	0.6	0.5	3.5	3.5	1.1	2.9	3.0	4.0	0.2	0.3	8.1	6.2	0.7	1.1	82.9	81.7
Rugby	0.0	0.0	N/A	0.0	0.0	5.3	0.0	5.3	N/A	0.0	0.0	0.0	0.0	0.0	0.0	89.5
Sailing	0.0	N/A	2.9	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	83.8	N/A
Skiing	0.0	0.0	0.5	1.5	0.5	0.5	1.0	0.0	0.5	0.0	15.2	12.8	0.0	0.5	82.2	84.7
Soccer	0.2	0.4	2.4	2.0	11.0	5.7	9.8	5.7	0.1	0.3	7.2	4.5	1.1	1.6	68.2	79.9
Softball	N/A	0.8	N/A	1.8	N/A	7.7	N/A	7.4	N/A	0.8	N/A	2.4	N/A	1.6	N/A	77.5
Squash	0.6	0.0	5.8	7.6	0.0	0.0	3.2	0.8	0.0	0.0	17.5	26.1	1.3	0.8	71.4	64.7
Swimming/Diving	0.3	0.2	3.1	2.9	2.0	1.3	3.6	3.0	0.1	0.2	6.4	5.6	0.7	0.9	83.7	85.8
Sync. Swimming	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0
Team Handball	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	N/A	0.0
Tennis	0.3	0.1	5.3	5.3	4.7	6.5	8.5	6.1	0.1	0.3	18.3	15.7	0.6	1.0	62.3	65.0
Track, Indoor	0.4	0.5	1.1	1.2	27.3	29.2	4.1	3.7	0.1	0.2	5.0	4.5	1.1	1.0	60.8	59.7
Track, Outdoor	0.4	0.4	1.3	1.1	27.0	29.1	4.6	3.9	0.1	0.2	4.7	4.5	1.1	1.0	60.7	59.6
Volleyball	1.3	0.3	4.7	1.9	2.3	12.4	6.2	3.8	1.9	0.7	7.0	4.0	1.9	1.5	74.7	75.4
Water Polo	0.3	0.7	2.9	4.6	0.9	0.7	5.3	7.6	0.9	1.2	8.5	5.6	1.7	2.6	79.5	77.0
Wrestling	0.9	N/A	2.2	N/A	5.6	N/A	6.7	N/A	0.0	N/A	4.1	N/A	1.0	N/A	79.5	N/A
All Sports	0.4	0.4	1.5	2.1	24.9	16.0	4.2	4.2	0.4	0.3	5.0	5.2	1.0	1.1	62.5	70.6

N/A = Not Applicable

(NCAA, 2010)

APPENDIX B



Indiana University Center for Postsecondary Research Data Sharing Agreement

This Indiana University Center for Postsecondary Research Data Sharing Agreement ("Agreement") defines the parameters for data sharing from the National Survey of Student Engagement ("NSSE") between the Research Institution and its Authorized Researchers named below and the Trustees of Indiana University on behalf of the Indiana University Center for Postsecondary Research ("IUCPR"). The terms below are intended to reflect and comply with the existing agreements between NSSE and the institutions that participate in the survey program. Under these participation agreements, NSSE may:

"...make data, in which individual institutions or students cannot be identified, available to researchers interested in studying the undergraduate experience... NSSE results specific to each institution and identified as such will not be made public except by mutual agreement between NSSE and the institution."

RESEARCHERS

The following researchers ("Authorized Researchers") of Auburn University ("Research Institution") may make use of NSSE data pursuant to the terms of this Agreement:

Adrienne J. Mills	Auburn University
David DiRamio, PhD	Auburn University

DATA DESCRIPTION

Under this Agreement, IUCPR will provide the researchers a data file delimited in the following ways ("NSSE Data File"):

- **Data Source:** NSSE 2010
- **Variables:** All survey items. In addition, three Institutional characteristics (Carnegie classification, size, and control) will be included. These institutional characteristics will be in categories that include at least 5 institutions. All student and institutional identifying information will be removed.
- **Cases:** All first-year and senior student-athletes attending NCAA Division I institutions (over 7,000 students). In addition, a 20% sample of all first-year and senior students who are not student-athletes and attend NCAA Division I institutions (over 30,000 students).



PARAMETERS FOR DATA SHARING:

1. IUCPR will provide a single copy of the NSSE Data File solely for non-commercial research by the Authorized Researchers.
2. The NSSE Data File will exclude the Unit ID code from Integrated Postsecondary Educational Data System (IPEDS), any other unique school or student identifiers, and any variables that IUCPR determines reasonably may permit the identification of a participating school or student.
3. The Authorized Researchers will not make any attempt, privately or publicly, to associate elements of the NSSE Data File with the individual institutions or individual students participating in the NSSE, nor will they share the data with anyone else who might do so.
4. In all publications or presentations of data obtained through this agreement, the Authorized Researchers agree to include the following citation: "NSSE data were used with permission from The Indiana University Center for Postsecondary Research."
5. The Authorized Researchers agree to provide to IUCPR a copy of all reports, presentations, analyses, or other materials in which the data given under this Agreement are presented, discussed, or analyzed.
6. **The data should be encrypted when not in use by the above researcher and should be destroyed once this particular research project (dissertation) has been completed. If the researcher needs the data for any longer period than that which is necessary for completing the dissertation, the researcher is required to ask for an extension. Using the data for other purposes besides completing the designated project (dissertation) must be approved by the Director for the Center for Postsecondary Research at Indiana University at Bloomington.**
7. The IUCPR of Indiana University may, by written notification to the Authorized Researchers and the Research Institution, terminate this Agreement if it determines, in its sole discretion, that either the Authorized Researchers or the Research Institution have breached the terms of this Agreement. In the event that this Agreement is terminated, the Authorized Researchers and Research Institution shall return the originals and all copies of the NSSE Data File to the IUCPR, and securely destroy all NSSE Data File elements contained in any analyses or other materials created or maintained by Authorized Researchers, within ten (10) days of the receipt of the termination notice.
8. IU will not be liable to the Research Institution for any direct, consequential, or other damages, related to the use of the NSSE Data File or any other information delivered by Indiana University or IUCPR in accordance with this Agreement. The Research Institution further agrees to assume all liability for its use of the NSSE Data File or any



NSSE
national survey of
student engagement

other information delivered by Indiana University or IUCPR in accordance with this Agreement.

9. FEES

In exchange for access to and use of the NSSE Data File, **Adrienne J. Mills** agrees to pay Indiana University the sum of **\$525**, by check upon execution of this Agreement:

SIGNATURES

The undersigned hereby consent to the terms of this Agreement and confirm that they have all necessary authority to enter into this Agreement.

For The Trustees of Indiana University:

Name: Trisha Adams
Title: Manager Grant Services
Office of Research Administration
Indiana University

7/30/14
Date

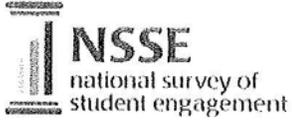
Alexander C. McCormick
Director,
National Survey of Student Engagement

7/21/2014
Date

For the Research Institution:

for
Dr. John Mason
Vice President for Research and Economic Development
Authorized Institutional Official of Research Institution

7-17-2014
Date

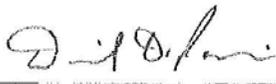


Acknowledgment of Authorized Researchers:



Adrienne J. Mills
Doctoral Student
Auburn University

7/18/14
Date



David DiRamio, PhD
Associate Professor
Auburn University

7-17-14
Date



AUBURN UNIVERSITY
OFFICE OF THE VICE PRESIDENT FOR
RESEARCH AND ECONOMIC DEVELOPMENT

COPY

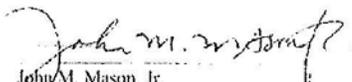
DELEGATION OF AUTHORITY LETTER

To Whom It May Concern:

By means of this letter, I, John M. Mason, Jr., Vice President for Research and Economic Development, acknowledging that the ultimate responsibility for the delegation as set forth herein remains with me, hereby delegate the authority herein described to the Assistant Vice President for Research, on the following terms and conditions:

- I. The Assistant Vice President for Research may review and execute, on my behalf, proposals, contracts, grants and other sponsored programs documents in the course of executing the duties contained in the respective job description.
- II. The Assistant Vice President for Research, in my absence, may review and execute, on my behalf, documents related to Research Compliance in the course of executing the duties contained in the respective job description.
- III. The contracts, proposals and other documents subject to this delegation are those relating to Sponsored Programs Administration and Research Compliance.
- IV. The effective date of this delegation is June 9, 2014 and shall run until revoked by me or my successor.
- V. The authority delegated is not subject to sub-delegation without my prior and express written consent.
- VI. In cases of extreme emergency where I or the Associate Vice President for Research cannot be reached and a contract or agreement that is not otherwise delegated herein must be executed to protect the interests of the institution, the Assistant Vice President for Research may execute such agreements or contracts.

This delegation is made pursuant to the Auburn University Contract Signature Authority Policy and is subject thereto.

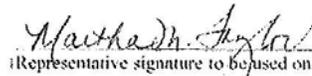


John M. Mason, Jr.
Vice President for Research and Economic Development

Date:

6/9/2014

Acknowledged and agreed:



(Representative signature to be used on documents)

Date:

6-9-2014

Martha M. Taylor
Assistant Vice President for Research

202 South Hall, Auburn, AL 36849-5112; Telephone: 334-844-4784; Fax: 334-844-5971

www.auburn.edu/research

APPENDIX C

**AUBURN UNIVERSITY INSTITUTIONAL REVIEW BOARD for RESEARCH INVOLVING HUMAN SUBJECTS
REQUEST FOR EXEMPT CATEGORY RESEARCH**

For information or help completing this form, contact: THE OFFICE OF RESEARCH COMPLIANCE, 115 Ramsay Hall
Phone: 334-844-5966 e-mail: IRBAdmin@auburn.edu Web Address: http://www.auburn.edu/research/vpr/ohs/index.htm

Revised 2/1/2014 Submit completed form to IRBsubmit@auburn.edu or 115 Ramsay Hall, Auburn University 36849.

Form must be populated using Adobe Acrobat / Pro 9 or greater standalone program (do not fill out in browser). Hand written forms will not be accepted.

Project activities may not begin until you have received approval from the Auburn University IRB.

1. **PROJECT PERSONNEL & TRAINING**

PRINCIPAL INVESTIGATOR (PI):

Name Adrienne Mills Title PhD Student Dept./School Higher Education
Address PO Box 351, Auburn, AL 36831 AU Email millsa1@auburn.edu
Phone 334-707-7673 Dept. Head Dr. Maria Witte

FACULTY ADVISOR (if applicable):

Name Dr. David DiRamio Title Associate Professor Dept./School Higher Education
Address 4096 Haley Center, Auburn, AL 36849
Phone 334-844-3065 AU Email diramdc@auburn.edu

KEY PERSONNEL: List Key Personnel (other than PI and FA). Additional personnel may be listed in an attachment.

Name	Title	Institution	Responsibilities

The Auburn University Institutional Review Board has approved this document for use from
7/7/14 to 7/6/17
Protocol # 14-254 EX 1407

KEY PERSONNEL TRAINING: Have all Key Personnel completed CITI Human Research Training (including elective modules related to this research) within the last 3 years? YES NO

TRAINING CERTIFICATES: Please attach CITI completion certificates for all Key Personnel.

2. **PROJECT INFORMATION**

Title: Going Pro in Something other than Sports: A study of the relationship between student-athlete engagement and the general student population

Source of Funding: Investigator Internal External

List External Agency & Grant Number: n/a

List any contractors, sub-contractors, or other entities associate with this project.
n/a

List any other IRBs associated with this project (including those involved with reviewing, deferring, or determinations).
n/a

FOR ORC OFFICE USE ONLY			
DATE RECEIVED IN ORC:	<u>6/30/14</u>	by <u>BK</u>	APPROVAL # <u>14-254 EX 1407</u>
DATE OF IRB REVIEW:		by	APPROVAL CATEGORY: <u>45-CFR 46.101(b)(4)</u>
DATE OF ORC REVIEW:		by	INTERVAL FOR CONTINUING REVIEW: <u>3yrs</u>
DATE OF APPROVAL:	<u>7/7/14</u>	by <u>BO</u>	
COMMENTS:			

3. **PROJECT SUMMARY**

a. Does the research involve any special populations?

- YES NO Minors (under age 19)
 YES NO Pregnant women, fetuses, or any products of conception
 YES NO Prisoners or Wards
 YES NO Individuals with compromised autonomy and/or decisional capacity

b. Does the research pose more than minimal risk to participants? YES NO

Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. 42 CFR 46.102(i)

c. Does the study involve any of the following?

- YES NO Procedures subject to FDA Regulation Ex. Drugs, biological products, medical devices, etc.
 YES NO Use of school records of identifiable students or information from instructors about specific students
 YES NO Protected health or medical information when there is a direct or indirect link that could identify the participant
 YES NO Collection of sensitive aspects of the participant's own behavior, such as illegal conduct, drug use, sexual behavior or use of alcohol
 YES NO Deception of participants

If you checked "YES" to any response in Question #3 STOP. It is likely that your study does not meet the "EXEMPT" requirements. Please complete a PROTOCOL FORM for Expedited or Full Board Review. You may contact IRB Administration for more information. (Phone: 334-844-5966 or Email: IRBAdmin@auburn.edu)

4. **PROJECT DESCRIPTION**

a. **Subject Population** (Describe, include age, special population characteristics, etc.)

Reported data from the following samples will be chosen: all first-year and senior student-athletes attending NCAA Division I institutions (over 7,000 students); 20% of all first-year and senior students from the general population attending NCAA Division I institutions (over 30,000 students).

b. Describe, step by step, all procedures and methods that will be used to consent participants.

- N/A (Existing data will be used)

- c. **Brief summary of project.** (Include the research question(s) and a brief description of the methodology, including recruitment and how data will be collected and protected.)

The purpose of this study is to investigate the engagement of student-athletes and the general student population with two factors from the National Survey of Student Engagement (NSSE), student-faculty interactions (SFI) and supportive campus environments (SCE). The relationship between the profile subgroups (student-athletes in revenue sports and student-athletes in non-revenue sports) with regard to SFI and SCE will also be examined.

RQ1. What is the relationship of student-faculty interaction (SFI) between student-athletes and the general student population?

RQ2. What is the relationship of supportive campus environment (SCE) between student-athletes and the general student population?

RQ3. What is the relationship of student-faculty interaction (SFI) between Division I student-athletes in revenue and non-revenue sports?

RQ4. What is the relationship of supportive campus environment (SCE) between Division I student-athletes in revenue and non-revenue sports?

- d. **Waivers.** Check any waivers that apply and describe how the project meets the criteria for the waiver.

- Waiver of Consent (Including existing de-identified data)
 Waiver of Documentation of Consent (Use of Information Letter)
 Waiver of Parental Permission (for college students)

Consent forms were obtained when original data was collected by the National Survey of Student Engagement (NSSE).

- e. **Attachments.** Please attach Informed Consents, Information Letters, data collection instrument(s), advertisements/recruiting materials, or permission letters/site authorizations as appropriate.

Signature of Investigator Adrienne Mills Date 6/25/14
Signature of Faculty Advisor D. J. Dikeman Date 6/25/14
Signature of Department Head Sherida Dawner Date 6/26/14

APPENDIX D



National Survey of Student Engagement 2010

The College Student Report

1 In your experience at your institution during the current school year, about how often have you done each of the following? Mark your answers in the boxes. Examples: or

	Very often ▼	Often ▼	Some- times ▼	Never ▼
a. Asked questions in class or contributed to class discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Made a class presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Prepared two or more drafts of a paper or assignment before turning it in	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Worked on a paper or project that required integrating ideas or information from various sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Come to class without completing readings or assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Worked with other students on projects during class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Worked with classmates outside of class to prepare class assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Put together ideas or concepts from different courses when completing assignments or during class discussions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Tutored or taught other students (paid or voluntary)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Participated in a community-based project (e.g., service learning) as part of a regular course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Used e-mail to communicate with an instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Discussed grades or assignments with an instructor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Talked about career plans with a faculty member or advisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Discussed ideas from your readings or classes with faculty members outside of class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Received prompt written or oral feedback from faculty on your academic performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Very often ▼	Often ▼	Some- times ▼	Never ▼
r. Worked harder than you thought you could to meet an instructor's standards or expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s. Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t. Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
u. Had serious conversations with students of a different race or ethnicity than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v. Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 During the current school year, how much has your coursework emphasized the following mental activities?

	Very much ▼	Quite a bit ▼	Some ▼	Very little ▼
a. Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Applying theories or concepts to practical problems or in new situations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3 During the current school year, about how much reading and writing have you done?

- a. Number of assigned textbooks, books, or book-length packs of course readings
- None 1-4 5-10 11-20 More than 20
- b. Number of books read on your own (not assigned) for personal enjoyment or academic enrichment
- None 1-4 5-10 11-20 More than 20
- c. Number of written papers or reports of **20 pages or more**
- None 1-4 5-10 11-20 More than 20
- d. Number of written papers or reports **between 5 and 19 pages**
- None 1-4 5-10 11-20 More than 20
- e. Number of written papers or reports of **fewer than 5 pages**
- None 1-4 5-10 11-20 More than 20

4 In a typical week, how many homework problem sets do you complete?

- None 1-2 3-4 5-6 More than 6
- a. Number of problem sets that take you **more** than an hour to complete
-
- b. Number of problem sets that take you **less** than an hour to complete
-

5 Mark the box that best represents the extent to which your examinations during the current school year have challenged you to do your best work.

- Very little Very much
- 1 2 3 4 5 6 7

6 During the current school year, about how often have you done each of the following?

- Very often Often Some-times Never
- a. Attended an art exhibit, play, dance, music, theater, or other performance
-
- b. Exercised or participated in physical fitness activities
-
- c. Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.)
-
- d. Examined the strengths and weaknesses of your own views on a topic or issue
-
- e. Tried to better understand someone else's views by imagining how an issue looks from his or her perspective
-
- f. Learned something that changed the way you understand an issue or concept
-

7 Which of the following have you done or do you plan to do before you graduate from your institution?

- | | Done | Plan to do | Do not plan to do | Have not decided |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Practicum, internship, field experience, co-op experience, or clinical assignment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Community service or volunteer work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Participate in a learning community or some other formal program where groups of students take two or more classes together | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Work on a research project with a faculty member outside of course or program requirements | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Foreign language coursework | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Study abroad | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Independent study or self-designed major | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

8 Mark the box that best represents the quality of your relationships with people at your institution.

- a. Relationships with **other students**
- Unfriendly, Unsupportive, Sense of alienation Friendly, Supportive, Sense of belonging
- 1 2 3 4 5 6 7
- b. Relationships with **faculty members**
- Unavailable, Unhelpful, Unsympathetic Available, Helpful, Sympathetic
- 1 2 3 4 5 6 7
- c. Relationships with **administrative personnel and offices**
- Unhelpful, Inconsiderate, Rigid Helpful, Considerate, Flexible
- 1 2 3 4 5 6 7

9 About how many hours do you spend in a typical 7-day week doing each of the following?

- a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
-
- b. Working for pay **on campus**
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
-
- c. Working for pay **off campus**
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
-
- d. Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
-
- e. Relaxing and socializing (watching TV, partying, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
-
- f. Providing care for dependents living with you (parents, children, spouse, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week
-
- g. Commuting to class (driving, walking, etc.)
- 0 1-5 6-10 11-15 16-20 21-25 26-30 More than 30
- Hours per week

10 To what extent does your institution emphasize each of the following?

- | | Very
much | Quite
a bit | Some | Very
little |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Spending significant amounts of time studying and on academic work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Providing the support you need to help you succeed academically | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Encouraging contact among students from different economic, social, and racial or ethnic backgrounds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Helping you cope with your non-academic responsibilities (work, family, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Providing the support you need to thrive socially | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Attending campus events and activities (special speakers, cultural performances, athletic events, etc.) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Using computers in academic work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

11 To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

- | | Very
much | Quite
a bit | Some | Very
little |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| a. Acquiring a broad general education | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Acquiring job or work-related knowledge and skills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Writing clearly and effectively | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Speaking clearly and effectively | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Thinking critically and analytically | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Analyzing quantitative problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Using computing and information technology | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Working effectively with others | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Voting in local, state, or national elections | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Learning effectively on your own | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Understanding yourself | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| l. Understanding people of other racial and ethnic backgrounds | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| m. Solving complex real-world problems | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| n. Developing a personal code of values and ethics | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| o. Contributing to the welfare of your community | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| p. Developing a deepened sense of spirituality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

12 Overall, how would you evaluate the quality of academic advising you have received at your institution?

- Excellent
- Good
- Fair
- Poor

13 How would you evaluate your entire educational experience at this institution?

- Excellent
- Good
- Fair
- Poor

14 If you could start over again, would you go to the same institution you are now attending?

- Definitely yes
- Probably yes
- Probably no
- Definitely no

15 Write in your year of birth:

16 Your sex:
 Male Female

17 Are you an international student or foreign national?
 Yes No

18 What is your racial or ethnic identification? (Mark only one.)
 American Indian or other Native American
 Asian, Asian American, or Pacific Islander
 Black or African American
 White (non-Hispanic)
 Mexican or Mexican American
 Puerto Rican
 Other Hispanic or Latino
 Multiracial
 Other
 I prefer not to respond

19 What is your current classification in college?
 Freshman/first-year Senior
 Sophomore Unclassified
 Junior

20 Did you begin college at your current institution or elsewhere?
 Started here Started elsewhere

21 Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now? (Mark all that apply.)
 Vocational or technical school
 Community or junior college
 4-year college other than this one
 None
 Other

22 Thinking about this current academic term, how would you characterize your enrollment?
 Full-time Less than full-time

23 Are you a member of a social fraternity or sorority?
 Yes No

24 Are you a student-athlete on a team sponsored by your institution's athletics department?
 Yes No (Go to question 25.)

On what team(s) are you an athlete (e.g., football, swimming)? Please answer below:

25 What have most of your grades been up to now at this institution?
 A B+ C+
 A- B C
 B- C- or lower

26 Which of the following best describes where you are living now while attending college?
 Dormitory or other campus housing (not fraternity/sorority house)
 Residence (house, apartment, etc.) within walking distance of the institution
 Residence (house, apartment, etc.) within driving distance of the institution
 Fraternity or sorority house
 None of the above

27 What is the highest level of education that your parent(s) completed? (Mark one box per column.)

Father	Mother
<input type="checkbox"/>	<input type="checkbox"/> Did not finish high school
<input type="checkbox"/>	<input type="checkbox"/> Graduated from high school
<input type="checkbox"/>	<input type="checkbox"/> Attended college but did not complete degree
<input type="checkbox"/>	<input type="checkbox"/> Completed an associate's degree (A.A., A.S., etc.)
<input type="checkbox"/>	<input type="checkbox"/> Completed a bachelor's degree (B.A., B.S., etc.)
<input type="checkbox"/>	<input type="checkbox"/> Completed a master's degree (M.A., M.S., etc.)
<input type="checkbox"/>	<input type="checkbox"/> Completed a doctoral degree (Ph.D., J.D., M.D., etc.)

28 Please print your major(s) or your expected major(s).

a. Primary major (Print only one.):

b. If applicable, second major (not minor, concentration, etc.):

THANKS FOR SHARING YOUR RESPONSES!

After completing the survey, please put it in the enclosed postage-paid envelope and deposit it in any U.S. Postal Service mailbox. Questions or comments? Contact the National Survey of Student Engagement, Indiana University, 1900 East Tenth Street, Suite 419, Bloomington IN 47406-7512 or nsse@indiana.edu or www.nsse.iub.edu. Copyright © 2009 Indiana University.



NSSE 2010 Codebook

Please note the following for the NSSE data file and codebook:

1. Invalid responses and non-responses are coded as missing “.” in the data file.
2. Changes to the questionnaire and/or data file from the previous year are identified by the following:
 - ~ **One** asterisk (*) denotes a variable that has been revised slightly from last year.
 - ~ **Two** asterisks (**) denote a variable that has been revised significantly from last year and given a new name.
 - ~ **Three** asterisks (***) denote a new variable.
3. Changes made in previous years can be viewed in past codebooks, available on the NSSE Web site at www.nsse.iub.edu/html/institutional_reports.cfm.

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
Question 1. In your experience at your institution during the current school year, about how often have you done each of the following?			
1a.	clquest	Asked questions in class or contributed to class discussions	
1b.	clpresen	Made a class presentation	
1c.	rewropap	Prepared two or more drafts of a paper or assignment before turning it in	
1d.	integrat	Worked on a paper or project that required integrating ideas or information from various sources	
1e.	divclass	Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	
1f.	clunprep	Come to class without completing readings or assignments	
1g.	classgrp	Worked with other students on projects during class	
1h.	occgrp	Worked with classmates outside of class to prepare class assignments	
1i.	intideas	Put together ideas or concepts from different courses when completing assignments or during class discussions	1 = Never 2 = Sometimes 3 = Often 4 = Very often
1j.	tutor	Tutored or taught other students (paid or voluntary)	
1k.	commproj	Participated in a community-based project (e.g., service learning) as part of a regular course	
1l.	itacadem	Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	
1m.	email	Used e-mail to communicate with an instructor	
1n.	facgrade	Discussed grades or assignments with an instructor	
1o.	facplans	Talked about career plans with a faculty member or advisor	
1p.	facideas	Discussed ideas from your readings or classes with faculty members outside of class	
1q.	facfeed	Received prompt written or oral feedback from faculty on your academic performance	

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
1r.	workhard	Worked harder than you thought you could to meet an instructor's standards or expectations	
1s.	facother	Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	
1t.	oocideas	Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	
1u.	divrstud	Had serious conversations with students of a different race or ethnicity than your own	
1v.	diffstu2	Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	

1 = Never
2 = Sometimes
3 = Often
4 = Very often

Question 2. During the current school year, how much has your coursework emphasized the following mental activities?

2a.	memorize	Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form	
2b.	analyze	Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components	
2c.	synthesz	Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships	
2d.	evaluate	Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions	
2e.	applying	Applying theories or concepts to practical problems or in new situations	

1 = Very little
2 = Some
3 = Quite a bit
4 = Very much

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
Question 3. During the current <i>school year</i> , about how much reading and writing have you done?			
3a.	readasgn	Number of assigned textbooks, books, or book-length packs of course readings	
3b.	readown	Number of books read on your own (not assigned) for personal enjoyment or academic enrichment	1 = None 2 = 1-4 3 = 5-10 4 = 11-20 5 = More than 20
3c.	writemor	Number of written papers or reports of 20 pages or more	
3d.	writemid	Number of written papers or reports between 5 and 19 pages	
3e.	writesml	Number of written papers or reports of fewer than 5 pages	
Question 4. In a <i>typical week</i> , how many homework problem sets do you complete?			
4a.	probseta	Number of problem sets that take you more than an hour to complete	1 = None 2 = 1-2 3 = 3-4 4 = 5-6 5 = More than 6
4b.	probsetb	Number of problem sets that take you less than an hour to complete	
5.	exams	Select the circle that best represents the extent to which your examinations during the current school year have challenged you to do your best work.	1 = Very little 2 = 2 3 = 3 4 = 4 5 = 5 6 = 6 7 = Very much

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
Question 6. During the current school year, about how often have you done each of the following?			
6a.	atdart07	Attended an art exhibit, play, dance, music, theater, or other performance	
6b.	exrcse05	Exercised or participated in physical fitness activities	
6c.	worshp05	Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.)	1 = Never 2 = Sometimes 3 = Often 4 = Very often
6d.	ownview	Examined the strengths and weaknesses of your own views on a topic or issue	
6e.	othrview	Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	
6f.	chngrview	Learned something that changed the way you understand an issue or concept	
Question 7. Which of the following have you done or do you plan to do before you graduate from your institution?			
7a.	intern04	Practicum, internship, field experience, co-op experience, or clinical assignment	
7b.	volntr04	Community service or volunteer work	
7c.	lrmcom04	Participate in a learning community or some other formal program where groups of students take two or more classes together	
7d.	resrch04	Work on a research project with a faculty member outside of course or program requirements	1 = Have not decided 2 = Do not plan to do 3 = Plan to do 4 = Done
7e.	forlng04	Foreign language coursework	
7f.	stdabr04	Study abroad	
7g.	indstd04	Independent study or self-designed major	
7h.	snrx04	Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)	

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
Question 8. Select the circle that best represents the quality of your relationships with people at your institution.			
8a.	envstu	Relationships with other students	1 = Unfriendly, Unsupportive, Sense of alienation 7 = Friendly, Supportive, Sense of belonging
8b.	envfac	Relationships with faculty members	1 = Unavailable, Unhelpful, Unsympathetic 7 = Available, Helpful, Sympathetic
8c.	envadm	Relationships with administrative personnel and offices	1 = Unhelpful, Inconsiderate, Rigid 7 = Helpful, Considerate, Flexible
Question 9. About how many hours do you spend in a typical 7-day week doing each of the following?			
9a.	acadpr01	Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	
9b.	workon01	Working for pay on campus	1 = 0 hours per week
9c.	workof01	Working for pay off campus	2 = 1-5 3 = 6-10 4 = 11-15
9d.	cocurr01	Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)	5 = 16-20 6 = 21-25 7 = 26-30
9e.	social05	Relaxing and socializing (watching TV, partying, etc.)	8 = More than 30 hours
9f.	carede01	Providing care for dependents living with you (parents, children, spouse, etc.)	
9g.	commute	Commuting to class (driving, walking, etc.)	

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
Question 10. To what extent does your institution emphasize each of the following?			
10a.	envschol	Spending significant amounts of time studying and on academic work	
10b.	envsuprt	Providing the support you need to help you succeed academically	
10c.	envdivrs	Encouraging contact among students from different economic, social, and racial or ethnic backgrounds	
10d.	envnacad	Helping you cope with your non-academic responsibilities (work, family, etc.)	1 = Very little
10e.	envsocial	Providing the support you need to thrive socially	2 = Some
10f.	envevent	Attending campus events and activities (special speakers, cultural performances, athletic events, etc.)	3 = Quite a bit
10g.	envcompt	Using computers in academic work	4 = Very much
Question 11. To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?			
11a.	gngenled	Acquiring a broad general education	
11b.	gnwork	Acquiring job or work-related knowledge and skills	
11c.	gnwrite	Writing clearly and effectively	
11d.	gnspeak	Speaking clearly and effectively	
11e.	gnanaly	Thinking critically and analytically	
11f.	gnquant	Analyzing quantitative problems	
11g.	gncmpts	Using computing and information technology	
11h.	gnothers	Working effectively with others	
11i.	gncitizn	Voting in local, state, or national elections	
11j.	gninq	Learning effectively on your own	

<i>Item #</i>	<i>Variable</i>	<i>Variable-Label</i>	<i>Response Values and Labels</i>
11k.	gnself	Understanding yourself	
11l.	gndivers	Understanding people of other racial and ethnic backgrounds	
11m.	gnprobsv	Solving complex real-world problems	1 = Very little 2 = Some 3 = Quite a bit 4 = Very much
11n.	gnethics	Developing a personal code of values and ethics	
11o.	gncommun	Contributing to the welfare of your community	
11p.	gnspirit	Developing a deepened sense of spirituality	
12.	advise	Overall, how would you evaluate the quality of academic advising you have received at your institution?	1 = Poor 2 = Fair 3 = Good 4 = Excellent
13.	entirexp	How would you evaluate your entire educational experience at this institution?	1 = Poor 2 = Fair 3 = Good 4 = Excellent
14.	samecoll	If you could start over again, would you go to the <i>same institution</i> you are now attending?	1 = Definitely no 2 = Probably no 3 = Probably yes 4 = Definitely yes
15.	birthyr	Select your year of birth:	
–	agebase	Age (Recoded from variable <i>birthyr.</i>)	
–	age	Age category	1 = 19 or younger 2 = 20-23 3 = 24-29 4 = 30-39 5 = 40-55 6 = Over 55

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
16.	sex	Your sex:	1 = Male 2 = Female
17.	internat	Are you an international student or foreign national?	1 = No 2 = Yes
18.	race05	What is your racial or ethnic identification? (Select only one.)	1 = American Indian or other Native American 2 = Asian, Asian American or Pacific Islander 3 = Black or African American 4 = White (non-Hispanic) 5 = Mexican or Mexican American 6 = Puerto Rican 7 = Other Hispanic or Latino 8 = Multiracial 9 = Other 10 = I prefer not to respond
19.	class	What is your current classification in college?	1 = Freshman/first-year 2 = Sophomore 3 = Junior 4 = Senior 5 = Unclassified
20.	enter	Did you begin college at your current institution or elsewhere?	1 = Started here 2 = Started elsewhere

Item #	Variable	Variable Label	Response Values and Labels
Question 21. Since graduating from high school, which of the following types of schools have you attended other than the one you are attending now? (Select all that apply.) (Note: This question is captured as five separate items to account for 'select all that apply' function .)			
	votech05	Vocational or technical school	
	comcol05	Community or junior college	
21.	fouryr05	4-year college other than this one	1 = Checked 2 = Not checked
	none05	None	
	ocol1_05	Other	
22a.	*** veteran	Are you a current or former member of the U.S. Armed Forces, Reserves, or National Guard? (Note: Item appeared only in the on-line instrument.)	1 = No 2 = Yes
22b.	*** vetpay	<i>(Only students who answered yes to question 22a. received the following question.)</i> As part of your military experience, did you receive combat pay, hostile fire pay, or imminent danger pay?	1 = No 2 = Yes
23.	enrlment	Thinking about this current academic term...How would you characterize your enrollment?	1 = Less than full-time 2 = Full-time
-	disted	Thinking about this current academic term...Are you taking all courses entirely on-line? (Note: Item appeared only in the on-line instrument.)	1 = No 2 = Yes
24	fratsoro	Are you a member of a social fraternity or sorority?	1 = No 2 = Yes

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
25a.	athlete	Are you a student-athlete on a team sponsored by your institution's athletics department?	1 = No 2 = Yes
25b.	athteam	On what team(s) sponsored by your institution's athletics department are you an athlete? (Select all that apply.)	

NSSE created unique identifiers for each sport team based on values provided in *athteam* .

sp_baseb	Baseball	
sp_bball	Basketball	
sp_bowl	Bowling	
sp_cc	Cross Country	
sp_fence	Fencing	
sp_fhock	Field Hockey	
sp_footb	Football	
sp_golf	Golf	
sp_gym	Gymnastics	
sp_ihock	Ice Hockey	
sp_track	Track & Field	
sp_lacr	Lacrosse	1 = Team Member
sp_rifle	Rifle	2 = Not a team member
sp_row	Rowing	
sp_ski	Skiing	
sp_socr	Soccer	
sp_softb	Softball	
sp_swim	Swimming & Diving	
sp_tenn	Tennis	
sp_voll	Volleyball	
sp_wpolo	Water Polo	
sp_wrest	Wrestling	
sp_oth	Other, specify:	

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>	
			1 = Baseball	13 = Rifle
			2 = Basketball	14 = Rowing
			3 = Bowling	15 = Skiing
			4 = Cross Country	16 = Soccer
			5 = Fencing	17 = Softball
			6 = Field Hockey	18 = Swimming & Diving
			7 = Football	19 = Tennis
			8 = Golf	20 = Volleyball
			9 = Gymnastics	21 = Water Polo
			10 = Ice Hockey	22 = Wrestling
			11 = Track & Field	23 = Other
			12 = Lacrosse	24 = More than one sport
				1 = C- or lower
				2 = C
				3 = C+
				4 = B-
				5 = B
				6 = B+
				7 = A-
				8 = A
26.	grades04	What have most of your grades been up to now at this institution?		

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
27.	livenow	Which of the following best describes where you are living now while attending college?	1 = Dormitory or other campus housing (not fraternity/sorority house) 2 = Residence (house, apartment, etc.) within walking distance of the institution 3 = Residence (house, apartment, etc.) within driving distance of the institution 4 = Fraternity or sorority house 5 = None of the above
28a.	fathredu	What is the highest level of education that your father completed?	1 = Did not finish high school 2 = Graduated from high school 3 = Attended college but did not complete degree 4 = Completed an associate's degree (A.A., A.S., etc.) 5 = Completed a bachelor's degree (B.A., B.S., etc.) 6 = Completed a master's degree (M.A., M.S., etc.) 7 = Completed a doctoral degree (Ph.D., J.D., M.D., etc.)
28b.	mothredu	What is the highest level of education that your mother completed?	
29a.	majrprim	Please enter your major(s) or your expected major(s). Primary major (Enter only one.):	
29b.	majrsecd	Please enter your major(s) or your expected major(s). If applicable, second major (not minor, concentration, etc.):	

Item #	Variable	Variable Label	Response Values and Labels
Note: The variables <i>majrpcod</i> and <i>majrscod</i> were created by NSSE staff; <i>majrprim</i> and <i>majrsecd</i> were recoded into one of the 85 majors below. The 2000 Classification of Instructional Programs (CIP) was used to guide recodes.			

Item #	Variable	Variable Label	Response Values and Labels
–	<i>majrpcod</i>	Primary major code (Recode of primary major variable <i>majrprim</i> into one of 85 major codes.)	<p>Arts and Humanities</p> <p>1 = Art, fine and applied 2 = English (language and literature) 3 = History 4 = Journalism 5 = Language and literature (except English) 6 = Music 7 = Philosophy 8 = Speech 9 = Theater or drama 10 = Theology or religion 11 = Other arts & humanities</p> <p>Biological Sciences</p> <p>12 = Biology (general) 13 = Biochemistry or biophysics 14 = Botany 15 = Environmental science 16 = Marine (life) science 17 = Microbiology or bacteriology 18 = Zoology 19 = Other biological science</p> <p>Business</p> <p>20 = Accounting 21 = Business administration (general) 22 = Finance 23 = International business 24 = Marketing 25 = Management 26 = Other business</p> <p>Education</p> <p>27 = Business education 28 = Elementary/middle school education 29 = Music or art education 30 = Physical education or recreation 31 = Secondary education 32 = Special education 33 = Other education</p> <p>Engineering</p> <p>34 = Aero-/astronautical engineering 35 = Civil engineering 36 = Chemical engineering 37 = Electrical or electronic engineering 38 = Industrial engineering 39 = Materials engineering 40 = Mechanical engineering 41 = General/other engineering</p> <p>Physical Science</p> <p>42 = Astronomy 43 = Atmospheric science (including meteorology) 44 = Chemistry 45 = Earth science (including geology) 46 = Mathematics 47 = Physics 48 = Statistics 49 = Other physical science</p> <p>Professional</p> <p>50 = Architecture 51 = Urban Planning 52 = Health technology (medical, dental, laboratory) 53 = Law 54 = Library/archival science 55 = Medicine 56 = Dentistry 57 = Veterinarian 58 = Nursing 59 = Pharmacy 60 = Allied health/other medical 61 = Therapy (occupational, physical, speech) 62 = Other professional</p> <p>Social Science</p> <p>63 = Anthropology 64 = Economics 65 = Ethnic studies 66 = Geography 67 = Political science (includes govt, int. relations) 68 = Psychology 69 = Social work 70 = Sociology 71 = Gender studies 72 = Other social science</p> <p>Other</p> <p>73 = Agriculture 74 = Communications 75 = Computer science 76 = Family Studies 77 = Natural resources and conservation 78 = Kinesiology 79 = Criminal justice 80 = Military science 81 = Parks, recreation, leisure studies, sports management 82 = Public administration 83 = Technical/vocational 84 = Other field 85 = UD</p>
–	<i>majrscod</i>	Secondary major code (Recode of secondary major variable <i>majrsecd</i> into one of 85 major codes.)	

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>		<i>Response Values and Labels</i>
–	majrpol	Recoded write-in major variables <i>majrprim</i> and <i>majrsecd</i> into one of ten major fields listed at right.	1 = Arts and Humanities	6 = Physical Science
–	majrscol		2 = Biological Science	7 = Professional
			3 = Business	8 = Social Science
			4 = Education	9 = Other
			5 = Engineering	10 = Undecided
–	majrdbl	Second (double) major provided in <i>majrprim</i> .		1 = Not double major
–	majrsdbl	Second (double) major provided in <i>majrsecd</i> .		2 = Double major
–	lastname	Please print the first three letters of your last name: (Item appears on locally administered paper surveys only.)		

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
Data Provided by Your Institution			
–	gender	Institution reported: Gender	1 = Male 2 = Female
–	ethnicit	Institution reported: Race or ethnicity	1 = African American/Black 2 = American Indian/Alaska Native 3 = Asian/Pacific Islander 4 = Caucasian/White 5 = Hispanic 6 = Other 7 = Foreign 8 = Multi-racial/ethnic 9 = Unknown
–	classran	Institution reported: Class level	1 = Freshman/First-year student 2 = Sophomore 3 = Junior 4 = Senior 5 = Unclassified
–	enrollmt	Institution reported: Enrollment status	1 = Part-time 2 = Full-time
–	studid	Student ID	
–	actt	Institution reported: Composite ACT score	
–	* sat_m	Institution reported: SAT math score	
–	* sat_v	Institution reported: SAT verbal or critical reading score	
–	* sat_w	Institution reported: SAT writing score (if newer form of SAT taken)	

<i>Item #</i>	<i>Variable</i>	<i>Variable Label</i>	<i>Response Values and Labels</i>
–	group1	First school-provided group identifier	
–	group2	Second school-provided group identifier	
–	group3	Third school-provided group identifier	
–	group4	Fourth school-provided group identifier	
–	group5	Fifth school-provided group identifier	

Data Related to Survey Administration

–	smp105	Sample type	1 = Base random sample 2 = Standard random oversample (first-year students and seniors only) 3 = Requested random oversample (first-year students and seniors only) 4 = Targeted oversample 5 = Locally administered sample or oversample
–	inelig	Identifies respondents that did not meet NSSE criteria at time of survey completion (December graduate, not retained by institution, etc.)	1 = Eligible 2 = Ineligible
–	modecomp	Mode of completion on The College Student Report	1 = Paper 2 = Web
–	surveyid	Unique survey number assigned by NSSE	
–	bsurvid	Identifies respondents who also completed BCSSE	
–	unitid	Institution unit ID (IPEDS or ESIS)	
–	respmode	Primary contact mode of respondent	1 = Paper mailing & some e-mail contacts 2 = E-mail contacts only 3 = E-mail contacts & a paper questionnaire 4 = Locally administered paper survey 5 = E-mail contacts & a paper postcard mailing
–	logdate	Date survey returned (paper) or logged in (web)	

Item #	Variable	Variable Label	Response Values and Labels
<p>Weights</p> <p><i>NSSE creates weights for randomly selected first-year and senior respondents based on part-time/full-time status and gender. Use weights to replicate NSSE benchmark scores, means, and the frequency column percentages. However, we encourage schools interested in intra-institutional weighting to consider a more sophisticated weighting system that takes into account response rate differences among additional student subpopulations. NSSE's weights are not appropriate for intra-institutional comparisons in most cases as the response rate differences among subgroups may not be the same as the ones that exist institution-wide at your school. Both weights listed below will reproduce your institution's report statistics, but the N's will differ. See NSSE's website for more detailed information about this topic.</i></p>			
–	WEIGHT1	<p>Gender, FT/PT weight for FY,SR within an institution: Replicates the original number of respondents for each institution and is used to produce means, frequency, and benchmark statistics for each institution. A full discussion of NSSE weighting is at http://nsse.iub.edu/html/weighting.cfm.</p>	
–	WEIGHT2	<p>Gender, FT/PT weight up to pop for FY,SR within an institution: Multiplies the number of respondents to match the institution's overall population size. A full discussion of NSSE weighting is at http://nsse.iub.edu/html/weighting.cfm.</p>	

Student-Level Benchmark Scores. To facilitate conversations about student engagement and its importance to student learning, collegiate quality, and institutional improvement, NSSE created five institution-level indicators or benchmarks of effective educational practice: (1) Level of Academic Challenge; (2) Active and Collaborative Learning; (3) Student-Faculty Interaction; (4) Enriching Educational Experiences; and (5) Supportive Campus Environment. Student-level benchmark scores, the precursors to these five institution-level benchmarks, are the student's average responses to items within the group, after all items have been placed on a 100-point scale. Student-level benchmark scores are created for randomly sampled first-year and senior students that answered three-fifths or more of the items within the group. Not only can institutions replicate their benchmark scores with this information, but they can also perform intra-institutional comparisons (e.g., department, college, etc.) to dig deeper into their data. The benchmark score for an institution is the weighted mean of these student-level scores. For more detailed information about how benchmarks are calculated, visit the NSSE Web site. nsse.iub.edu/links/institutional_reporting

<i>Variable</i>	<i>Description</i>	<i>Component Items</i>
AC	Level of Academic Challenge: Index that measures time spent preparing for class, amount of reading and writing, deep learning, and institutional expectations for academic performance.	readasgn, writemor, writemid, writesml, analyze, synthesz, evaluate, applying, workhard, acadpr01, envschol
ACa	Level of Academic Challenge (adjusted): Same as AC, but adjusted for part-time enrollment status. This is the version given in your Benchmark Comparisons report. Because part-time students spend less time in classes, they are likely to report lower numbers for several items on the questionnaire (e.g., hours spent preparing for class, number of papers written, number of assigned books read). Using full-time/part-time ratios from the entire U.S. NSSE cohort, we adjust part-time student scores to make them resemble those of full-time students when we create the benchmarks. Thus schools with large populations of part-time students are not negatively impacted by this population.	readasgn, writemor, writemid, writesml, analyze, synthesz, evaluate, applying, workhard, acadpr01, envschol
ACL	Active and Collaborative Learning: Index that measures extent of class participation, working collaboratively with other students inside and outside of class, tutoring and involvement with a community-based project.	clquest, clpresen, classgrp, occgrp, tutor, commproj, oocideas
SFI	Student-Faculty Interaction: Index that measures extent of talking with faculty members and advisors, discussing ideas from classes with faculty members outside of class, getting prompt feedback on academic performance, and working with faculty on research projects	facgrade, facideas, facplans, facfeed, facother, resrch04
SFc	Student-Faculty Interaction (Comparable): Student-Faculty Interaction recomputed without <i>RESRCH04</i> so that data collected prior to 2004 can be compared with data collected in 2004 and beyond. Multiyear comparisons that only contain data collected since 2004 do not need to use SFc, and can use SFI. For additional detail see www.nsse.iub.edu/html/Part-time Adjustment.cfm	facgrade, facideas, facplans, facfeed, facother (Note: Excludes <i>resrch04</i> .)

<i>Variable</i>	<i>Description</i>	<i>Component Items</i>
EEE	Enriching Educational Experiences: Index that measures extent of interaction with students of different racial or ethnic backgrounds or with different political opinions or values, using electronic technology, and participating in activities such as internships, community service, study abroad, co-curricular activities, and culminating senior experience. (Note: Because question 7 was rescaled in 2004, year-to-year comparisons of <i>EEE</i> scores with years prior to 2004 are invalid.)	diffstu2, divrstud, envdivrs, cocurr01, itacadem, intern04, volntr04, lrncom04, forlng04, stdabr04, indstd04, snrx04
SCE	Supportive Campus Environment: Index that measures extent to which students perceive the campus helps them succeed academically and socially, assists them in coping with non-academic responsibilities, and promotes supportive relations among students and their peers, faculty members, and administrative personnel and offices.	envsocial, envsuprt, envnacadm, envstu, envfac, envadm