EXAMINING THE RELATIONSHIP BETWEEN STUDENT ENGAGEMENT AND PARTICIPATION IN HIGH-IMPACT PRACTICES AMONG NCAA DIVISION I STUDENT-ATHLETES

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EXAMINING THE RELATIONSHIP BETWEEN STUDENT ENGAGEMENT AND PARTICIPATION IN HIGH-IMPACT PRACTICES AMONG NCAA DIVISION I STUDENT-ATHLETES (145 pp.)

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The purpose of this study was to use existing data from the National Survey of Student Engagement (NSSE) to examine the relationship between student engagement indicators and NCAA Division I student-athletes' participation in high-impact practices, specifically internships and study abroad. Student engagement indicators were the independent variables in this study and included academic challenge, learning with peers, experiences with faculty, and campus environment. This study examined a sample of senior student-athletes enrolled at an NCAA Division I institution who completed NSSE in 2019 (N = 1,794). This study utilized descriptive, correlation, and logistic regression to answer the research questions.

After controlling for student demographic characteristics, student engagement indicators predicted student-athletes' participation in internships. The variables learning with peers and experiences with faculty were statistically significant, while academic challenge and campus environment were not significant. Student engagement indicators also predicted student-athletes' participation in study abroad, with academic challenge being significant, while the other engagement indicators were not significant. The findings from this study suggest that to create an environment that fosters student-athletes' participation in internships and study abroad, institutions need to facilitate ways to increase student-athletes' engagement. The findings from this study provide insight to practitioners interested in increasing the number of students who participate in high-impact practices.

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CHAPTER I

INTRODUCTION

In response to the national dialogue and concern about student-athletes' collegiate experiences, in 2021, the member schools in the National Collegiate Athletic Association (NCAA) decided the time had come to refocus the organization's efforts to better meet the needs of student-athletes (Durham, 2021). To better meet the needs of student-athletes, the NCAA membership engaged in a process to redraft the organization's constitution, where a key part of this process was identifying the core principles of college sports (Durham, 2021). First among the core principles the NCAA membership identified is the primacy of the academic experience (NCAA, 2021c). This principle states, "it is the responsibility of each member institution to establish and maintain an environment in which a student-athlete's activities are conducted with the appropriate primary emphasis on the student-athlete's academic experience" (NCAA, 2021c, p. 1). The NCAA membership has maintained across the various versions of its constitution that a basic purpose of the association is to support and promote intercollegiate athletics as an integral part of a student's educational experience (NCAA, 2021a, 2021c). Considering the renewed emphasis on the student-athlete experience and the NCAA membership's commitment to placing primary emphasis on student-athletes' academic experiences, institutions must establish an environment that supports student-athletes' learning and personal development.

The NCAA Division I membership has a history of implementing legislation to support student-athletes' educational experiences, including programs that prepare student-athletes for careers and life after sport. In 2015, the NCAA Division I Board of Directors convened a committee of individuals from across the NCAA membership to identify areas of priority for institutions to focus their attention to improve the student-athlete experience (Brutlag Hosick,

2015). The committee identified 13 priority areas for institutions to focus on, including preparing student-athletes for careers and life after sport (NCAA, 2016). In response to this priority area, a focus of the NCAA membership has been on increasing the opportunity for student-athletes to participate in internships and study abroad. In 2017, the NCAA membership passed legislation that provides flexibility in eligibility and financial aid rules to encourage institutions to establish internship and study abroad programs that accommodate the athletic and academic schedules of student-athletes (NCAA, 2017a, 2017b). Additionally, in 2017, the NCAA membership adopted time demands legislation designed to enhance the college experience of student-athletes by providing them with more time to engage in non-athletic pursuits (Brutlag Hosick, 2016; NCAA, 2017c).

Despite the NCAA membership's priority on creating opportunities for student-athletes to participate in internships and study abroad, student-athlete participation in these activities is not widespread. A study conducted by Gallup (2020) on college experiences and post-college outcomes of students who competed in athletics at any of the NCAA's three divisions found that 31% of student-athletes reported participating in internships, and 15% reported participating in study abroad. The NCAA legislation is in place to encourage participation in these activities; however, it appears that legislative changes alone will not be enough to encourage student-athletes to participate in these activities.

Statement of the Problem

My goal for this study was to discover information to improve student-athletes' educational experiences. The findings from this study can inform the NCAA membership on how to meet its ongoing commitment to place a primary emphasis on student-athletes' academic experiences and provide insight to help ensure that institutions maintain athletics as an integral

part of the educational experience of student-athletes. Toward this end, this study examined the relationship among factors central to students' educational experiences: student engagement and participation in high-impact practices. Kuh (2003) has defined student engagement as students' time and effort toward educationally purposeful activities, like studying and practicing a subject, and what the institution does to encourage students to participate in these activities. Indicators of student engagement include active and integrative academic behaviors and practices, interaction with peers and faculty, and students' perceptions of the campus environment (Wolf-Wendel et al., 2009). High-impact practices are effective educational practices, including internships and study abroad, that impact student learning and retention (Kuh, 2008). Internships and study abroad were of interest in this study due to the priority the NCAA membership places on these activities.

Studies have found that students who participate in high-impact practices benefit from gains in learning and development (Kilgo et al., 2014; Kuh, 2008), increased sense of belonging (Ribera et al., 2017), and higher retention (Provencher & Kassel, 2019). As it relates specifically to internships, Kilgo et al. (2014) found that students' participation in internships positively affects their inclination to inquire and lifelong learning, intercultural effectiveness, and socially responsible leadership. Zehr and Korte (2020) found that students reported learning communication and problem-solving skills from participating in their internships. Additionally, studies have found that participating in study abroad has a positive association with students' self-reported gains in general and practical learning (Kuh, 2008), personal development (Kuh, 2008), and intercultural effectiveness (Clarke et al., 2009; Kilgo et al., 2014). This research makes it clear that participation in high-impact practices is associated with positive outcomes for

students; however, involvement in these activities is not widespread among student-athletes (Gallup, 2020).

Students commonly report that a lack of time is a barrier to their participation in internships and study abroad (Hora et al., 2020; McKinney et al., 2004; NAFSA, 2003). Balancing their course loads and degree requirements makes it difficult for many students to fit an internship or study abroad experience into their schedules (Hora et al., 2020; NAFSA, 2003). Student-athletes also report a lack of time to participate in internships and study abroad due to their time commitments to athletics (Potuto & O'Hanlon, 2007).

Studies have also found that students commonly report that financial constraints are barriers to their involvement in internships and study abroad (Hora et al., 2020; NAFSA, 2003; Vernon et al., 2017). In a study conducted by Hora et al. (2020), students reported that they would like to participate in an internship but could not because they needed to continue to work at their paid employment. Research has also found that students commonly report that a barrier to their participation in study abroad is the cost of participating in the program and the loss of wages from not working while they are abroad (NAFSA, 2003; Vernon et al., 2017).

In response to these barriers, the NCAA membership passed legislation that provides flexibility in its eligibility and financial aid rules to encourage institutions to establish internship and study abroad programs so student-athletes can participate in these activities (Brutlag Hosick, 2016; NCAA, 2017a, 2017b, 2017c). Despite this effort, however, there is a disconnect as addressing time and resource issues does not appear to be changing the environment to facilitate student-athletes' involvement in these activities.

In this study, I looked past the barriers and into new directions to understand how institutions can facilitate an environment for student-athletes to participate in internships and

study abroad. More specifically, in this study, I looked broadly at student-athletes' experiences by examining if there is a relationship between students' engagement across the undergraduate experience and their participation in internships and study abroad.

Studies have found that student engagement is related to students' academic success (Kuh et al., 2008), persistence (S. Hu, 2011; Kuh et al., 2008), and learning and development (Astin, 1993; Mayhew et al., 2016; Pascarella & Terenzini, 2005). According to Kuh (2008), there is a relationship between participation in high-impact practices and student engagement; however, no studies have examined the relationship between these variables in the student-athlete population.

The research on student engagement in the student-athlete population is limited in that it focuses primarily on making comparisons between athletes and non-athletes and sport types on levels of engagement and achievement of desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016; Umbach et al., 2006). This study extends the understanding of student-athlete engagement beyond comparisons between groups and explores the relationship between engagement and participation in high-impact practices.

Due to the nature of intercollegiate athletics, student-athletes' educational experiences are unique. Student-athletes must grapple with challenges related to the time demands of their sport (Gaston Gayles, 2009; Jolly, 2008), and they must meet academic and athletic eligibility requirements that their non-athlete peers do not have to meet (NCAA, 2021a). According to results from the GOALS study conducted by the NCAA (2020a), student-athletes in Division I reported spending 34 hours a week on athletic activities when their sport is in season and 33 hours a week on athletic activities when their sport is not in season. Additionally, to remain eligible to compete, student-athletes must meet various academic eligibility requirements, including earning a minimum number of credit hours each semester, earning a minimum

percentage of their degree each year, and meeting specific GPA requirements each semester (NCAA, 2021a).

Moreover, studies have found that student-athletes' relationships with their coach and teammates impact their educational experiences (Potuto & O'Hanlon, 2007; Yukhymenko-Lescroart et al., 2015). Coaches influence student-athletes' academic goals and overall satisfaction with their choice of college (Potuto & O'Hanlon, 2007; Yukhymenko-Lescroart et al., 2015). Furthermore, student-athletes' teammates provide social and emotional support that helps them succeed (Potuto & O'Hanlon, 2007). Due to student-athletes' unique experiences, there is a need to study this population to understand how to facilitate an environment to support their participation in the educational experience.

Fortunately, institutions collect data on student engagement and participation in high-impact practices from students across the United States through the National Survey of Student Engagement (NSSE; NSSE, 2013). In this study, I used data from NSSE to examine the relationship between student engagement and participation in high-impact practices among the NCAA student-athlete population. Studying the connection between student engagement and participation in high-impact practices among NCAA student-athletes informs institutions about how to facilitate an environment for student-athletes to engage in activities across the entire student experience.

Purpose of Study

The purpose of this study was to use existing data from NSSE to examine the relationship between student engagement indicators and NCAA Division I student-athletes' participation in high-impact practices, specifically internships and study abroad. I used the concept of student engagement to guide this study. Student engagement is a measure of students' quality of effort

and involvement in educationally purposeful activities both inside and outside the classroom and what the institution does that influences students to participate in these activities (Kuh, 2008).

The independent variables were student engagement indicators as they are measured through NSSE and grouped into the following themes: (a) academic challenge, (b) learning with peers, (c) experiences with faculty, and (d) campus environment (Indiana University Center for Postsecondary Research [IUCPR]; IUCPR, n.d.-d). The dependent variables were student-athletes' participation in internships and participation in study abroad. The control variables were student demographic characteristics and included race/ethnicity, sex, major, grades, transfer status (i.e., transfer or non-transfer student), parents' level of education, and student's living arrangement. Using these control variables is consistent with other studies that have examined the experiences of the student-athlete population (Gaston Gayles & Hu, 2009; Umbach et al., 2006). Furthermore, the literature on students' participation in internships and study abroad has suggested that these variables may be related to students' involvement in these activities (Hora et al., 2020; Institute of International Education, 2021; NAFSA, 2003).

Research Questions

The following research questions guided this study:

1. What is the relationship between student engagement indicators and participation in internships among NCAA Division I student-athletes?
2. What is the relationship between student engagement indicators and participation in study abroad among NCAA Division I student-athletes?

Conceptual Framework

I used the concept of student engagement as it is described by Kuh (2001, 2009b) and measured through NSSE to guide this study. According to Wolf-Wendel et al. (2009), student

engagement is a construct that is rooted in several theories, including Pace's (1980) quality of effort measures, Astin's (1984) theory of student involvement, and principles of good practice in undergraduate education proposed by Chickering and Gamson (1987). The student engagement construct focuses on academic behaviors and practices, interaction with peers and faculty, and students' perceptions of the campus environment (Wolf-Wendel et al., 2009). I chose the student engagement framework for this study because it focuses on the student experience and ways to improve it (Kuh, 2003). Chapter 2 discusses the theories that underpin the student engagement framework in more detail.

Significance of Study

This study of the relationship between student engagement indicators and student-athletes' participation in internships and study abroad has important scholarly and practical implications. This study's findings may interest scholars and higher education practitioners inside and outside of athletics who are interested in supporting student success.

Theoretical and Scholarly Significance

This study contributes to the scholarship on student engagement and high-impact practices in two ways. First, studies that examined the effectiveness of high-impact practices on student learning and other desired outcomes raised self-selection bias as a limitation (Provencher & Kassel, 2019; Ribera et al., 2017). When studying the influence of participating in high-impact practices on retention, Provencher and Kassel (2019) identified that the positive effects of participating in high-impact practices might be due to internal factors related to the student. Provencher and Kassel (2019) stated, "students who choose to participate in HIPs may be more motivated or engaged, so their better outcomes may result from those types of internal factors rather than being an effect of the HIP" (p. 235). Ribera et al. (2017) made a similar declaration in

their study and identified that a possible limitation is that students with a higher sense of belonging may seek opportunities to participate in high-impact practices. This study contributes to understanding the impact of self-selection bias by using student engagement indicators as independent variables to examine the relationship between student engagement and participation in two high-impact practices, internships and study abroad.

Second, the research on the engagement of the student-athlete population has focused on comparing athletes to non-athletes and comparing high profile and low profile sports on levels of engagement and achievement of desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016; Umbach et al., 2006). This study adds to the literature by extending the examination of student-athlete engagement beyond making comparisons to exploring the relationship between engagement and participation in high-impact practices.

Practical Significance

This study's findings are important for higher education practitioners inside and outside of athletics who are interested in supporting student success. Understanding the relationship between student engagement indicators and student-athletes' participation in high-impact practices can help athletic administrators implement support programs that encourage student-athletes to participate in the educational experience. Moreover, while my primary interest in this study was to examine the student-athlete population, the findings from this study will also be helpful to higher education practitioners outside of athletics who are interested in increasing the number of students who participate in high-impact practices. Kuh (2008) recommended that students participate in at least two high-impact practices during their undergraduate careers; however, Kuh further recommended that to achieve this goal, institutions first need to increase the number of students who are participating in high-impact practices. This

study informs practitioners about how to facilitate an environment that supports students' participation in these activities.

The findings from this study can also have policy implications related to NCAA legislation. As previously mentioned, the NCAA membership adopted legislative changes in 2017 to allow flexibility and time for student-athletes to pursue internships and study abroad (Brutlag Hosick, 2016; NCAA, 2017a, 2017b, 2017c); however, participation in these activities remains low (Gallup, 2020). Understanding the factors related to participation in high-impact practices may inform future NCAA legislative changes to allow for development across the engagement indicators instead of focusing only on internships and study abroad.

Key Definitions

To clarify the terms in this dissertation, I provide definitions for the concepts related to this study. Additionally, I define the key terms related to intercollegiate athletics that I use throughout this dissertation.

1. *Student engagement:* A measure of students' quality of effort and involvement in educationally purposeful activities both inside and outside the classroom and what the institution does that influences students to participate in these activities (Kuh, 2008).
2. *Quality of interactions:* In the NSSE survey, quality of interactions is a student engagement indicator that measures students' perceptions of the quality of their interactions with five different groups of people in their learning environment, including students, academic advisors, faculty, student services, and other administrative staff (IUCPR, n.d.-b; NSSE, 2013).
3. *Supportive environment:* In the NSSE survey, supportive environment is a student engagement indicator that measures students' perceptions of the extent their

institution emphasizes programs and activities that support their growth in cognitive, social, and physical domains (NSSE, 2013).

4. *Cognitive engagement:* Students' academic and social integration into the university measured by students' level of intellectual development, peer group interactions, interactions with faculty, perception of faculty's concern for their development, and commitment to the institution (Sweat et al., 2013).
5. *High-impact practices:* Activities, including internships and study abroad, that Kuh (2008) called effective educational practices because of their association with gains in student learning and retention.
6. *National Collegiate Athletic Association:* A member-driven organization that oversees collegiate sports programs at the national level (NCAA, 2021a). Member schools of the NCAA include accredited four-year colleges and universities that voluntarily agree to follow the principles and bylaws of the association (NCAA, 2021a). The NCAA is split into three divisions (Division I, Division II, and Division III; NCAA, n.d.). The purpose of the three divisions is to align institutions into the same division based on institutional philosophy (NCAA, n.d.).
7. *Student-athlete:* A term used to identify a student who participates on a collegiate institution's varsity athletic team.
8. *NCAA legislation:* A set of policies and regulations that govern the conduct of intercollegiate athletic programs, including the basic purposes, rules and regulations, and general activities of each member school (NCAA, 2021a). NCAA legislation identifies rules and regulations for activities related to admissions, financial aid,

eligibility, recruiting, and students' time spent participating in their sport (NCAA, 2021a).

9. *Eligibility requirements:* A set of rules and regulations in the NCAA legislation that specifies the academic and athletic requirements that student-athletes must meet to participate in their sport and to receive athletically related financial aid (NCAA, 2021a). Student-athletes who do not meet the academic and athletic eligibility requirements face various restrictions, including not being able to participate in practice, competition, or receive athletically related financial aid (NCAA, 2021a).
10. *Financial aid:* Scholarships or educational grants-in-aid that a student-athlete can receive from their collegiate institution for their participation in intercollegiate athletics (NCAA, 2021a).
11. *Time demands legislation:* A set of rules and regulations in the NCAA legislation that specifies limits on the amount of time student-athletes can participate in their sport (NCAA, 2021a). The purpose of this legislation is to provide student-athletes with time to participate in educational opportunities (NCAA, 2021a).
12. *Athletically related activity:* NCAA legislation defines athletically related activity as activities with an athletic purpose [e.g., practice, competition, and weight training] (NCAA, 2021a). Athletically related activities can also include non-athletic activities associated with a student's sport [e.g., recruiting, fundraising, media, and community service] when an institution requires the student to participate (NCAA, 2021a).

Organization of Dissertation

This dissertation presents four additional chapters. Chapter 2 of this dissertation reviews the literature on the key areas of focus in this study, including student engagement, high-impact

practices, and the student-athlete population. The third chapter discusses the methods I used to conduct this study. Chapter 4 discusses the data and the research findings. Finally, Chapter 5 discusses my conclusions of the research findings and proposes areas for future research.

Chapter Summary

This chapter introduced the problem this study aimed to address. This chapter began by discussing the NCAA membership's commitment to maintaining intercollegiate athletics as an integral part of the educational experience. Furthermore, this chapter described that the NCAA membership has identified that preparing student-athletes for careers and life after sport is a priority and passed legislation to increase student-athletes' opportunities to participate in internships and study abroad (NCAA, 2016, 2017a, 2017b). Despite the NCAA membership's efforts, student-athlete participation in internships and study abroad is not widespread (Gallup, 2020). This study looked beyond barriers to participation and into new directions to discover factors related to student-athletes' participation in these activities. More specifically, this study examined the relationship between student engagement indicators as measured by NSSE and student-athletes' participation in internships and study abroad.

This chapter concluded by discussing the scholarly and practical significance of this study's findings. The findings from this study may be of interest to scholars and higher education practitioners inside and outside of athletics who are interested in supporting student success. The next chapter reviews the literature on the key areas of focus in this study, including student engagement, high-impact practices, and the student-athlete population.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter reviews the literature related to the areas of interest in this study, including student engagement, high-impact practices, and characteristics of the student-athlete population and their educational experiences. The first section discusses the literature on student engagement and its connection to the undergraduate student experience. More specifically, this section provides an overview of how student engagement is operationalized in the literature and discusses research on the relationship between student engagement and various outcomes, including academic achievement, persistence, and cognitive and affective development. Also in this section is a discussion of the student engagement conceptual framework and the theories that underpin student engagement. The next section of this chapter discusses what high-impact practices are, and it reviews studies that examine the impact that participating in high-impact practices has on student success. This chapter also includes a section that provides an overview of the National Survey of Student Engagement (NSSE), as this study analyzed data from this survey. The final section of this chapter discusses the characteristics of the student-athlete population and the unique aspects of their collegiate experiences.

Student Engagement

In the 21st century, a primary focus of the public, as well as policymakers, has been on increasing access to higher education for all people who want to attend college, making college affordable, and institutions being accountable for student success (National Leadership Council for Liberal Education and America's Promise [LEAP]; LEAP, 2007). While access, affordability, and accountability are important, institutions must also commit to educational excellence (LEAP, 2007). With the public, policymakers, and leaders in higher education placing

a priority on assessing the quality of students' experiences and what they are learning in college, studies that examine student engagement are needed.

According to Kuh (2003), to evaluate the quality of students' undergraduate experiences, researchers and practitioners need to examine student engagement. As described in Chapter 1, Kuh (2003) has defined student engagement as students' time and effort toward educationally purposeful activities and what the institution does to encourage students to participate in these activities. Studies that have examined student engagement typically defined students' quality of effort and involvement in educationally purposeful activities as a measure of students' time and effort toward studying and practicing a subject (Kuh, 2003). What the institution does to influence participation in these activities is a measure of students' perceptions of the institution's policies and practices (Kuh, 2003).

It is important to note that student engagement has been operationalized in various ways across the literature. For example, S. Hu (2011) operationalized student engagement as two variables: academic engagement and social/community engagement. On the other hand, Umbach et al. (2006) measured engagement by level of academic challenge, student-faculty interactions, and active and collaborative learning. While student engagement is operationalized in different ways across the literature, the underlying measure of student engagement is often consistent with how NSSE defines and measures it. NSSE measures student engagement through 10 engagement indicators which are grouped into four themes: (a) academic challenge, (b) learning with peers, (c) experiences with faculty, and (d) campus environment (NSSE, 2013). I discuss NSSE in more detail later in this chapter.

The next section reviews the literature on the relationship between student engagement and various college outcomes.

Benefits of Student Engagement on College Outcomes

Studies have generally found that student engagement is associated with positive outcomes, including academic achievement (Kuh et al., 2008), persistence (S. Hu, 2011; Kuh et al., 2008), and learning and development (Astin, 1993; Mayhew et al., 2016; Pascarella & Terenzini, 2005).

Academic Achievement and Persistence

In a study conducted by Kuh et al. (2008), the researchers found that student engagement is positively related to students' first-year GPA. Additionally, Kuh et al. (2008) found that student engagement has a greater effect on GPA for students with lower academic ability and students of color. Studies have also found that student engagement is related to persistence (S. Hu, 2011; Kuh et al., 2008). S. Hu (2011) found that different levels of engagement correspond with the likelihood that students will persist from the first year to the second year. Kuh et al. (2008) also found that student engagement is positively related to persistence. As with the findings related to GPA, Kuh et al. (2008) found that student engagement has a greater effect on persistence for students with lower academic ability and students of color.

It is important to note, however, that the relationship between student engagement and persistence is not as straightforward as it may seem. S. Hu (2011) found that the relationship between engagement and persistence is not linear. Students who reported a high-level of academic engagement were less likely to persist from the first year to the second year than those who reported middle-level academic engagement. However, students who reported low-level academic engagement were least likely to persist. In this study, Hu defined academic engagement as activities associated with academic work, including working and discussing ideas

with peers and faculty outside of class and working harder than anticipated to meet the instructor's expectations.

Interestingly, S. Hu (2011) found that students who reported high-level social/community engagement were more likely to persist than those who reported middle or low-level social/community engagement. Hu defined social/community engagement as students' participation in activities with a fraternity or sorority or residence hall, activities that reflect their cultural heritage, and community service. Hu also found that social/community engagement positively impacts students who reported high-level academic engagement. Persistence among students who reported high-level academic and high-level social/community engagement was 94% compared to 62.8% for students who reported high-level academic engagement without high-level social/community engagement.

S. Hu (2011) concluded that academic and social/community engagement function differently in supporting student success. Hu also cautioned that the assumption that more is better might not be the case with all aspects of student engagement and suggested that global measures of student engagement may mask the true impact of the various elements of engagement. The study conducted by Kuh et al. (2008) previously discussed also used a global measure of student engagement. The researchers used a composite score of various activities, including interaction with faculty, experience with diverse others, and collaborative learning. Using a global measure for engagement did not allow the researchers to examine specific aspects of student engagement to determine which activities have a stronger relationship with academic achievement and persistence.

Considering the limitations of these studies due to using a global measure for student engagement, I decided to operationalize student engagement as a measure of a student's level of

engagement in four variables: (a) academic challenge, (b) learning with peers, (c) experience with faculty, and (d) campus environment. Measuring student engagement using these four variables instead of a global measure allowed for a more in-depth examination of student engagement.

Cognitive and Affective Development

In their seminal work on examining how college affects students, Astin (1993) and Pascarella and Terenzini (2005) argued that rigorous coursework, students' time and effort devoted to academic activities, interactive learning, interactions with peers and faculty, and how faculty deliver the curriculum are important factors to students' cognitive and affective development. It is important to note when examining how college affects students, Astin (1993) and Pascarella and Terenzini (2005) did not specifically use the term student engagement; however, they examined many of the factors common to student engagement, including academic rigor, learning with peers, and interaction with faculty. Building on Pascarella and Terenzini's (2005) work, Mayhew et al. (2016) examined how college affects students in the 21st century and confirmed much of this earlier work that students engaged in their learning gain more than those who are passive. This section centers around the themes of academic rigor and interaction with peers and faculty to discuss how these factors relate to cognitive and affective development.

Astin (1993) and Pascarella and Terenzini (2005) argued that the rigor of coursework is related to cognitive development. More specifically, coursework that exposes students to scientific inquiry may positively influence the development of critical thinking skills (Astin, 1993; Pascarella & Terenzini, 2005). Furthermore, courses that require the integration of topics and skills across courses aid in students' cognitive development (Astin, 1993; Pascarella &

Terenzini, 2005). Finally, coursework that exposes students to perspectives that may differ from their own promotes affective change (Pascarella & Terenzini, 2005).

Interaction and collaboration with peers also impact students' cognitive and affective development (Astin, 1993; Mayhew et al., 2016; Pascarella & Terenzini, 2005). Astin (1993) stated, "the student's peer group is the single most potent source of influence on growth and development during the undergraduate years" (p. 398). Pascarella and Terenzini (2005) explained that evidence exists that students' interactions with peers, where they can reinforce the ideas they are learning in the classroom, impact their cognitive development. Mayhew et al. (2016) stated that students' interactions with peers outside the classroom through social and extracurricular activities and peer tutoring positively contribute to their learning.

Interacting with faculty is also influential on students' affective and cognitive development (Astin, 1993; Pascarella & Terenzini, 2005). According to Pascarella and Terenzini (2005), interacting with faculty outside of the classroom, where the interaction focuses on student development or expanding on classroom discussion, positively impacts students' cognitive development. Furthermore, when speaking about students' development, Astin (1993) stated, "next to the peer group, the faculty represents the most significant aspect of the student's undergraduate development" (p. 410). Astin (1993) explained that how faculty deliver the curriculum and the amount and quality of contact that faculty have with students impacts their learning and development.

This review of the literature on the relationship between student engagement and students' success highlights that student engagement is not a unitary construct (Wolf-Wendel et al., 2009). Student engagement consists of factors related to students' quality of effort in academic coursework and practices of the institution that encourage students to participate in

educationally purposeful activities (Kuh, 2001, 2009b). Thus, the student engagement construct and the factors associated with student engagement are rooted in several theories (Wolf-Wendel et al., 2009).

Theories That Underpin Student Engagement

According to Wolf-Wendel et al. (2009), the concept of student engagement was originally influenced by C. Robert Pace's (1980) quality of effort measures, Astin's (1984) theory of involvement, and principles of good practice in undergraduate education proposed by Chickering and Gamson (1987).

Quality of Effort Measures

Pace (1980) argued that activities that require more effort from students are the ones that lead to more gains in learning. However, Pace also argued that gains in learning are not only because of the student, but institutions have to offer activities and opportunities that require high effort from students.

Pace (1980) developed these ideas after conducting a study using items from the College Student Experiences questionnaire to develop measures of quality of effort by asking students how often they engaged in various activities that ranged from undemanding (e.g., taking notes in class) to those that would require more effort (e.g., explaining class material to others). Pace grouped the activities into three areas, including academic and intellectual experiences, personal and interpersonal experiences, and facilities and opportunities offered by the institution. Pace then asked students to report how often they engaged in each of these activities. Pace found that students who spend a significant amount of time on activities that require lower levels of effort make less progress in meeting learning objectives than students who spend less time but participate in activities that require more effort. Pace concluded that the activities that require

more effort are the ones that lead to more gains in learning. Moreover, Pace concluded that students' gains in learning and development depend on the types of activities the institution offers and what the student does with those offerings. Curtis (1980) discussed implications for the findings from Pace's (1980) study and argued that quality of effort measures are a key factor in examining students' learning experiences.

Theory of Student Involvement

According to Astin (1984), "student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience" (p. 297). When proposing this theory, Astin suggested that more involved students are more likely to experience development, positive gains in learning, and other positive outcomes like persisting at the institution and satisfaction. According to Astin, this theory focuses on students' behaviors that facilitate learning and development, not aspects of who the student is, like their values, anxiety, stress levels, or what they think. Astin proposed that students can practice involvement in a variety of activities, including academic work, extracurricular activities, and interaction with faculty and staff at the institution. Finally, Astin explained that the amount of time a student spends participating in these activities impacts the extent to which they will achieve success.

Astin (1984) described the five assumptions of this theory, which I summarize here. First, involvement refers to the amount of physical and psychological energy students devote to various activities. Second, students can display varying degrees of involvement; thus, involvement occurs on a continuum. Third, involvement can be quantitative, which refers to the amount of time a student spends on an activity, and qualitative, which refers to the amount of effort a student puts into the activity. Fourth, the gains in learning and development a student receives from an activity are related to the quality and quantity of involvement the student

commits to the activity. Fifth, how effective a program is depends on its ability to increase students' involvement.

The theory of student involvement contributes to higher education in that researchers can use this theory to guide research on student development, and this theory can help practitioners design effective learning environments (Astin, 1984). It is important to note that practitioners and researchers have used the terms involvement and engagement interchangeably in higher education (Wolf-Wendel et al., 2009). However, according to Wolf-Wendel et al. (2009), the student engagement construct differs from the theory of student involvement proposed by Astin (1984) in that student engagement focuses attention on educational processes and the institution's actions to influence student engagement.

Principles of Good Practice

After reviewing over 50 years of research on undergraduate education, Chickering and Gamson (1987) proposed seven principles of good practice to improve the undergraduate educational experience. They explained that the focus of the seven principles is on how faculty and students can improve the educational experience, not on the content of the curriculum. As Chickering and Gamson described them, the first of the seven principles includes frequent contact between students and faculty both inside and outside the classroom. The second principle is reciprocity and cooperation among students, where the focus is on collaboration among students instead of competition. The third principle is the use of active learning techniques where students are active in the classroom by writing, talking, and applying what they know. The fourth principle is that faculty need to provide prompt feedback that helps students assess their knowledge and areas to improve. The fifth principle is that institutions need to create opportunities to help students effectively allocate their time to learning. The sixth principle is

that faculty and institutions should develop ways to communicate high expectations for students to perform well. Finally, the seventh principle includes respecting diverse talents and ways of learning by providing students with the opportunity to learn in a way that works for them before pushing them to learn in new ways.

Chickering and Gamson (1987) argued that the responsibility for these seven principles of good practice falls mostly on faculty and students. However, they argued that university leaders, state and federal officials, and accrediting agencies must also take responsibility for providing an environment where these practices can flourish. According to Chickering and Gamson, there must be adequate resources, support, and a plan to assess these practices to create this environment.

This review of the literature now turns to focus on high-impact practices to include a discussion of what high-impact practices are and their relationship to positive outcomes, including learning (Kilgo et al., 2014; Kuh, 2008), sense of belonging (Ribera et al., 2017), engagement (Kuh, 2008; Sweat et al., 2013) and retention (Provencher & Kassel, 2019). This section of the review also discusses the literature on the barriers to student participation in internships and study abroad.

High-Impact Practices

To receive the full benefit of participating in higher education, students must achieve success in a set of essential learning outcomes aligned with work, life, and citizenship (LEAP, 2007). Moreover, to maximize their chance for success, students should achieve the essential learning outcomes across the curriculum through the general education requirements and within their major fields of study (LEAP, 2007). To assist students in meeting these essential learning outcomes, institutions need to be intentional about providing students with the opportunity to

participate in effective educational practices where they can integrate their learning (LEAP, 2007). The 2007 LEAP report introduced 10 effective educational practices: (a) first-year seminars, (b) common intellectual experiences, (c) learning communities, (d) writing-intensive courses, (e) collaborative learning assignments, (f) undergraduate research, (g) diversity and global learning, (h) service and community-based learning, (i) internships, and (j) capstone courses (Kuh, 2008). Kuh (2008) called these effective educational practices high-impact practices because of their impact on student learning and retention.

Studies on high-impact practices have often examined the 10 high-impact practices just described; however, this study focused specifically on two high-impact practices, internships and study abroad. I decided to focus on internships and study abroad as these practices are of high priority to the NCAA membership, as evidenced by the strategic focus placed on these activities as a means to improve the student-athlete experience (NCAA, 2016). Internships involve opportunities for students to be involved with direct experience in a work setting that is typically related to their majors and desired careers (Kuh, 2008). The high-impact practice called diversity and global learning consists of programs and courses designed to facilitate students' learning about cultures and perspectives different from their own, and this practice can take many forms in the curriculum, including study abroad (Kuh, 2008).

Much of the research on high-impact practices has examined how effective they are on various college outcomes and has found that, overall, they are effective (Kilgo et al., 2014; Kuh, 2008; Provencher & Kassel, 2019; Ribera et al., 2017; Sweat et al., 2013). Several of these studies have examined the impact of all 10 high-impact practices identified in the 2007 LEAP report. The following section reviews the literature on the benefits of high-impact practices on

college outcomes with a specific focus on the impact of internships and study abroad, as these are the two high-impact practices of interest in this study.

Benefits of High-Impact Practices on College Outcomes

Students' participation in high-impact practices has a positive impact on their learning and development (Kilgo et al., 2014; Kuh, 2008), sense of belonging (Ribera et al., 2017), engagement (Kuh, 2008; Sweat et al., 2013), and retention (Provencher & Kassel, 2019). However, offering high-impact practices may not contribute to higher graduation rates as a study conducted by Randall-Johnson and King-Stage (2018) found no relationship between offering high-impact practices and four- and six-year institutional graduation rates.

Student Learning and Development

According to Kuh (2008), participating in high-impact practices, including learning communities, study abroad, student-faculty research, service-learning, and capstone experiences, is positively associated with students' self-reported gains in learning and personal development. Regarding study abroad specifically, Kuh (2008) concluded that it has a positive association with students' self-reported gains in general and practical learning and personal development.

Studies have also found that studying abroad may impact students' cognitive and affective learning (Clarke et al., 2009; Kilgo et al., 2014; Lee et al., 2012). Kilgo et al. (2014) found that participating in study abroad impacted first-year students' gains in intercultural effectiveness. In this study, the researchers defined intercultural effectiveness as students' awareness and acceptance of similarities and differences, students' enjoyment in interacting with diverse individuals, and being challenged by different perspectives. Furthermore, students who studied abroad showed increased global mindedness and intercultural communication skills than

students who did not participate (Clarke et al., 2009). Finally, according to Lee et al. (2012), studying abroad may promote students' creative thinking.

Studies have also found that students' participation in internships positively impacts their learning and development (Kilgo et al., 2014; Zehr & Korte, 2020). Kilgo et al. (2014) found that participation in internships positively affected first-year students' inclination to inquire, inclination toward lifelong learning, intercultural effectiveness, and socially responsible leadership. Zehr and Korte (2020) found that students reported learning communication and problem-solving skills in their internships. The findings from these studies point to a positive association between students' involvement in internships and their learning, but it is important to note the limitations of these studies. The participants in the study conducted by Kilgo et al. (2014) were first-year students, thus making it difficult to generalize the findings to students who are beyond their first year in college. Zehr and Korte (2020) examined a small sample of engineering students from one university.

Sense of Belonging and Engagement

Research has also found that students' participation in high-impact practices positively impacts their sense of belonging (Ribera et al., 2017) and overall engagement (Kuh, 2008; Sweat et al., 2013). Ribera et al. (2017) found that students' participation in learning communities and service-learning had a positive relationship with their sense of peer belonging and institutional acceptance. Additionally, students who participated in research with faculty reported a higher sense of institutional acceptance (Ribera et al., 2017).

Student participation in high-impact practices is also associated with higher levels of student engagement (Kuh, 2008). Kuh defined student engagement as students' self-reported levels of their academic challenge, active and collaborative learning, faculty interaction, and

perception of having a supportive campus environment. According to Kuh, students who participate in any of the 10 high-impact practices, including internships and study abroad, experience higher levels of engagement across all four student-engagement indicators.

Sweat et al. (2013) found that participating in high-impact practices was a predictor of student engagement; however, this study defined student engagement as cognitive and behavioral engagement. More specifically, the researchers found that participating in an internship predicted students' cognitive engagement. The researchers defined cognitive engagement as a composite score of students' self-reported academic and intellectual development, peer group interactions, interactions with faculty, perception of faculty concern for their development, and commitment to the institution. Interestingly, participating in study abroad was not a predictor of cognitive engagement, but it was a predictor of behavioral engagement. The researchers defined behavioral engagement as a composite score of students' self-reported interactions with faculty and students, participation in student organizations, and participation in academically related activities. In this study, participating in an internship was not a predictor of behavioral engagement.

Sweat et al. (2013) conducted this study at one university; thus, the findings are limited as the relationship between high-impact practices and student engagement may be because of factors specific to that institution. My study examined the relationship between student engagement and high-impact practices using data from a nationally administered survey that includes multiple institutions across the United States (IUCPR, n.d.-f).

Retention

In a study conducted by Provencher and Kassel (2019), the researchers found that student retention has a positive relationship with participation in high-impact practices. More

specifically, the researchers reported that student participation in high-impact practices is a significant predictor of retention after the first and second years. Additionally, they reported that student participation in high-impact practices during their second year uniquely predicts retention after the second year. Provencher and Kassel suggested this means that more recent participation in a high-impact practice is a stronger predictor of retention. They concluded that institutions should encourage students to participate in high-impact practices throughout the curriculum to increase retention after the first year.

In this study, Provencher and Kassel (2019) measured students' participation in high-impact practices as a composite score of their involvement in five activities, including common intellectual experiences, community-engaged courses, diversity learning experiences (including travel courses and study abroad), internships, and undergraduate research. Using a composite score to measure students' participation in high-impact practices did not allow the researchers to specifically analyze the impact of internships or study abroad.

Graduation

As just described, several studies have found that participating in high-impact practices has a positive impact on student learning and development (Kilgo et al., 2014; Kuh, 2008), sense of belonging (Ribera et al., 2017), engagement (Kuh, 2008; Sweat et al., 2013), and retention (Provencher & Kassel, 2019). However, the benefits of offering high-impact practices may not extend to higher institutional graduation rates (Randall-Johnson & King-Stage, 2018).

Randall-Johnson and King-Stage (2018) examined the relationship between offering the 10 high-impact practices identified in the 2007 LEAP report and institutional four-year and six-year graduation rates. The researchers hypothesized that there would be a positive relationship between offering high-impact practices and institutional graduation rates because of

the research findings on the benefits of high-impact practices on student learning and academic outcomes. Academic officers at 101 four-year public institutions reported the institutional availability for each high-impact practice, with response options ranging from not offered to required for all students. Interestingly, the researchers found that eight of the high-impact practices did not have a significant relationship with institutions' four-year or six-year graduation rates. Furthermore, they found that offering internships and first-year seminars had a small negative relationship with institutional graduation rates. The researchers concluded that students might experience benefits in their learning and other academic outcomes from participating in high-impact practices, but the benefits they experience may not be indicators of their potential to graduate.

As just described, much of the research on high-impact practices examined how effective they are on various student outcomes and has found that overall, they are effective (Kilgo et al., 2014; Kuh, 2008; Provencher & Kassel, 2019; Ribera et al., 2017; Sweat et al., 2013). However, research indicates that participation in these activities is not widespread. As it relates to internships and study abroad specifically, according to results from the 2020 administration of NSSE, 50% of undergraduate seniors reported participating in an internship or field experience, and 14% of undergraduate seniors reported participating in study abroad (NSSE, n.d.). However, the study conducted by Gallup (2020) referenced in Chapter 1 found that only 31% of student-athletes and non-athletes reported participating in an internship. Additionally, according to data gathered by the Institute of International Education (IIE) and released in the annual Open Doors report, during the 2018–2019 academic year, 16.1% of the students in the United States pursuing a bachelor's degree studied abroad at some point during their degree program (IIE, 2020).

With participation not being widespread among students, studies have examined barriers that keep students from participating in these activities. The following section reviews the research on barriers to students' participation in high-impact practices, with a focus on internships and study abroad, specifically.

Barriers to Students' Participation in High-Impact Practices

A study conducted by Finley and McNair (2013) examined barriers to students' participation in high-impact practices. In this study, Finley and McNair examined students' participation in six high-impact practices, including learning communities, service-learning courses, study abroad, internships, capstone courses, and research with faculty. The researchers found that students from traditionally underrepresented student populations (e.g., first-generation, Pell-eligible) reported a lack of understanding about high-impact practices, and having limited time and money are barriers to their participation in these activities.

Some studies have specifically examined barriers to student participation in internships and study abroad. Similar to Finley and McNair's (2013) findings, these studies found that a lack of financial resources (Hora et al., 2020; Thompson et al., 2021; Vernon et al., 2017) and a lack of time (Hora et al., 2020) are two common barriers to participation. Other barriers identified include a lack of internship opportunities related to the student's major (Hora et al., 2020; Thompson et al., 2021). For study abroad specifically, additional barriers include inflexible degree requirements (NAFSA, 2003) and, for some minoritized students, fear of racism and lack of awareness about opportunities (Dessoff, 2006; Hembroff & Rusz, 1993). Finally, studies have found that students' demographic and background characteristics are associated with study abroad participation (Salisbury et al., 2009; Stroud, 2010). The following sections discuss the barriers to participation in internships and study abroad in more detail.

Barriers to Participation in Internships

Studies have found that financial constraints are a barrier to students' participation in internships (Hora et al., 2020; Thompson et al., 2021). Hora et al. (2020) conducted a study of students nearing graduation at three different types of institutions, including a comprehensive university, a technical college, and a Historically Black College, to examine students' experiences with internship programs. Of the students who reported they had not completed an internship in the previous 12 months, 64% said they were interested in completing an internship but could not. One of the most common reasons students reported for not participating in an internship was the need to work at their paid employment. Thompson et al. (2021) found similar findings in their qualitative study of students attending a Historically Black College or University. The researchers found that participants reported that the type of compensation offered by the internship was a deciding factor in applying because they had to consider their financial obligations and student loan debt. In the global health profession, the cost of living coupled with unpaid internships creates a barrier for some to access advanced education and training in the field (Barnett-Vanes et al., 2014).

Studies have also identified a lack of time as a barrier to students' participation in internships (Hora et al., 2020; McKinney et al., 2004). In the study conducted by Hora et al. (2020), students identified a lack of time due to balancing their course load with other obligations to be a reason for their inability to pursue an internship, though they were interested in participating in one. McKinney et al. (2004) found a similar finding among students nearing graduation in the field of sociology. In this study, 65% of the students reported not participating in internships because they did not have enough time.

Finally, studies have found that students report a lack of opportunities related to their major is a barrier to their participation in internships (Hora et al., 2020; Thompson et al., 2021). In the study conducted by Hora et al. (2020), a lack of internship opportunities in their discipline was one of the top barriers participants reported, with 42% of participants reporting this as a barrier. Thompson et al. (2021) found that participants in humanities and social science majors reported having difficulty finding internships relevant to their field and ultimately giving up trying due to lack of success. However, participants in STEM and business majors reported an easier time finding internships in their field due to nationally funded internship programs and a pipeline from the school to the industry (Thompson et al., 2021).

Barriers to Participation in Study Abroad

The Commission on the Abraham Lincoln Study Abroad Fellowship Program (hereafter Lincoln Commission), a NAFSA task force on education abroad, and research studies have identified several barriers to students' participation in study abroad. The most commonly reported barriers across these reports and studies included the cost of studying abroad and challenges related to fitting a study abroad experience into a student's degree program (Lincoln Commission, 2005; NAFSA, 2003; Vernon et al., 2017).

According to the Lincoln Commission (2005), one of the primary challenges that inhibit more students from participating in study abroad is the cost. A 2003 report released by the NAFSA Strategic Task Force on Education Abroad also identified financial constraints are barriers to students' participation. However, the NAFSA report also suggested that students might perceive there to be financial constraints, but, in some cases, it may be less expensive for students to spend a semester abroad compared to living on campus. Vernon et al. (2017) surveyed 155 undergraduate students, most of whom were studying business, on their perception

of barriers to their participation in study abroad and found that the cost associated with studying abroad was one of the top concerns for them. In addition to the cost of participating in the study abroad program, students reported that the loss of wages due to not being able to work while abroad was a barrier to their ability to participate (NAFSA, 2003; Vernon et al., 2017).

The curricular requirements in certain majors may make it difficult for students to find time in their schedules and degree programs to fit in a study abroad experience (Lincoln Commission, 2005; NAFSA, 2003). The Lincoln Commission (2005) reported that most students who study abroad are in the humanities, social sciences, foreign language, and business and management fields. The IIE (2020) Open Doors report found similar findings, with most students who studied abroad during the 2018–2019 academic year being in business, management, and social science majors. The Lincoln Commission (2005) argued that students who major in programs that require a specific sequence of required courses might find it difficult to participate in study abroad. The NAFSA (2003) report also described that fitting a study abroad experience into the undergraduate program may be even more difficult for students in majors leading to a licensed profession (e.g., teaching, medicine, engineering) because of the inflexible structure of the curriculum in those majors.

Also of interest in the research is who is participating in study abroad programs. According to the IIE (2021) Open Doors report, during the 2018–2019 academic year, of the 347,099 U.S. students who studied abroad, the majority were White (68.7%) and female (67.3%). Black or African American students made up 6.4% of the total population who studied abroad in 2018–2019 (IIE, 2021). Hispanic and Latino or Latina students were 10.9% of the total population participating in study abroad in that same year (IIE, 2021). It is important to note that

the gender and racial/ethnic profile of U.S. students who study abroad has been consistent since at least 2000 (IIE, 2021).

Some studies have examined the barriers for Black and African American students in study abroad programs and have found that fear of racism and lack of awareness are barriers in addition to financial concerns (Dessoff, 2006; Hembroff & Rusz, 1993). Hembroff and Rusz (1993) conducted a study of undergraduate students at Michigan State University to identify reasons for the underrepresentation of African American students in study abroad programs. The researchers found that African American students reported not being able to afford to study abroad as one of the primary reasons they did not participate. The researchers also found that African American students reported fear of racism and lack of awareness about studying abroad are reasons they do not participate. Higher education professionals who work in study abroad programs also cited that students' concerns about racism make many minoritized students hesitant about participating in study abroad programs (Dessoff, 2006).

Research has also found that some demographic characteristics and students' social and cultural predispositions are associated with their intent to study abroad (Salisbury et al., 2009; Stroud, 2010). In a study conducted by Salisbury et al. (2009), the researchers found that students from higher-income backgrounds and students with parents with higher levels of education were more likely to plan to study abroad. Stroud (2010) found that students who lived with other students either on-campus or off-campus were more likely to plan to study abroad compared to those who lived with family members. Salisbury et al. (2009) also found that students who reported a higher interest in reading and writing, were more open to diverse ideas, and those with more co-curricular involvement were more likely to plan to study abroad.

The findings from Salisbury et al. (2009) are limited in that the researchers examined a sample that included only students in their first year of collegiate enrollment. My study adds to the literature on factors associated with students' participation in study abroad by examining students in their senior year of collegiate enrollment.

Findings from studies on barriers to students' participation in internships and study abroad are fairly consistent, with concerns about financial resources and time being the two most commonly reported barriers (Hora et al., 2020; Lincoln Commission, 2005; McKinney et al., 2004; NAFSA, 2003; Vernon et al., 2017). The studies on the barriers to participation are informative, but research needs to extend beyond barriers to discover new information about factors associated with student participation in these activities. A few studies have examined factors associated with students' intent to study abroad and have found that students' demographic and background characteristics are related (Salisbury et al., 2009; Stroud, 2010). My study contributes to the literature by examining the relationship between student engagement and participation in internships and study abroad. Findings from my study can inform institutions on how to facilitate an environment that encourages students to participate in these activities.

Student participation in high-impact practices and student engagement are measured through the administration of NSSE (Indiana University Center for Postsecondary Research, 2019). The following section provides an overview of NSSE, but the instrument and administration of the survey are discussed in more detail in Chapter 3.

National Survey of Student Engagement

The Indiana University Center for Postsecondary Research (IUCPR) conducts NSSE annually (Kuh, 2009a). The results obtained from NSSE provide institutions with data about aspects of the student experience that research has found to be related to student success (Kuh,

2009a). The development of NSSE began in the late 1990s as a way to measure college quality by focusing on student behavior and effective educational practices instead of college rankings that focus on institutional resources and reputation (Kuh, 2009a). In 2019, 531 colleges and universities that grant at least a bachelor's degree participated in the collection of data through NSSE (IUCPR, n.d.-f), and a total of 1,650 institutions have participated in NSSE since the initial administration of the survey in 2000 (IUCPR, n.d.-i).

When measured through NSSE, student engagement is not a direct measure of student learning, but rather a measure of students' levels of participation in activities that influence their quality of learning and overall educational experiences (Kuh, 2001; Wolf-Wendel et al., 2009). The student engagement construct gained awareness in higher education through the development and use of NSSE, though the idea of student engagement existed before NSSE came into existence (Wolf-Wendel et al., 2009).

There are two versions of NSSE, with the first version in use from 2000 to 2012 (IUCPR, n.d.-d). The first version of NSSE collected data on five benchmarks of student behavior and institutional features that contribute to student learning and development: (a) academic challenge, (b) active and collaborative learning, (c) student and faculty interaction, (d) enriching educational experiences, and (e) supportive campus environment (Kuh, 2009a). In 2013, researchers at IUCPR updated NSSE to reflect increased knowledge about student success factors, institutional improvement efforts, and current issues and concerns (IUCPR, n.d.-d). The researchers called this updated version NSSE 2.0, and this is the version of the currently administered survey (IUCPR, n.d.-d).

NSSE 2.0 includes two significant changes. The first change includes moving away from the five benchmarks to instead using 10 engagement indicators grouped into four themes: (a)

academic challenge, (b) learning with peers, (c) experiences with faculty, and (d) campus environment (IUCPR, n.d.-d). Another significant change is measuring students' participation in six high-impact practices: (a) service-learning, (b) learning communities, (c) research with faculty, (d) internships or field experience, (e) study abroad, and (f) culminating senior experiences (IUCPR, n.d.-d, 2019). The first version of NSSE combined the high-impact practices into one variable in the benchmark, enriching educational experiences (NSSE, 2013). NSSE 2.0 disaggregates these practices making it possible to measure a student's participation in a single activity (NSSE, 2013).

In this study, I used NSSE data to explore student-athletes' educational experiences by examining the relationship between student engagement indicators and student-athletes' participation in high-impact practices, specifically internships and study abroad. There is a need to study the student-athlete population because student-athletes are a unique demographic of students with unique challenges and characteristics. The next section discusses the characteristics of the student-athlete population and the unique aspects of their experiences.

Student-Athlete Experience

In the 2020–2021 academic year, 493,297 students participated in NCAA sponsored sports across all three divisions (Division I, Division II, Division III), with 184,028 participating in Division I (NCAA, 2021b). According to the latest NCAA Division I graduation rate reports, for the cohort of students who entered college as full-time students in the fall of 2014, the graduation success rate is 90% (Durham & Heath, 2021). The success of student-athletes is a point of pride for the NCAA membership and reflects the emphasis it places on supporting the academic success of student-athletes. However, the NCAA membership still has work to do to support student-athletes. NCAA President, Mark Emmert, commented, "we must also support

the initiatives that help the remaining 10% of student-athletes earn their degrees" (as cited in Brutlag Hosick, 2020, para. 3). In addition to supporting student-athletes to earn their degrees, as discussed in Chapter 1, NCAA member institutions have identified several priority areas to focus on, including preparing all student-athletes for careers and life after sport (NCAA, 2016). The findings from this study can inform the NCAA membership on how to support student-athletes' academic success.

The following sections review unique aspects of the student-athlete experience, including the time demands of athletics, academic and athletic eligibility requirements, the influence of coaches and teammates, and student-athlete engagement and participation in internships and study abroad. This discussion begins with a review of the NCAA legislation that addresses time demands and academic and athletic eligibility requirements, as this is the legislation that impacts student-athletes' participation in internships and study abroad. As discussed in Chapter 1, the NCAA membership adopted changes to this legislation to allow more time and flexibility to encourage student-athletes to participate in these activities (NCAA, 2017a, 2017b, 2017c).

Time Demands of Athletic Participation

Student-athletes commit a significant amount of time to practice and competition in their sport (Gaston Gayles, 2009; Jolly, 2008). According to results from the NCAA (2020a) GOALS study, student-athletes in Division I reported spending 34 hours a week on athletic activities when their sport is in season and 33 hours a week on athletic activities when their sport is not in season. Moreover, student-athletes reported spending anywhere from four to nine hours on athletic activities on days when they have competition (NCAA, 2020b). Additionally, according to the GOALS study, student-athletes in Division I reported spending 35.5 hours a week on academics (NCAA, 2020a).

Notwithstanding, the NCAA Division I manual (2021a) identifies legislation limiting the weekly and daily number of hours that student-athletes can participate in their sport. These limitations differ depending on if the sport is in-season or out of season. The legislation specifies that student-athletes' time on athletic activity is limited to four hours a day and 20 hours a week when their sport is in-season. When their sport is not in-season, student-athletes' time spent on athletic activity is limited to no more than eight hours a week. Furthermore, the legislation specifies that institutions must give student-athletes at least one day off from athletic activity every week when their sport is in-season and at least two days off per week when their sport is not in-season.

As discussed in Chapter 1, in 2017, the NCAA membership adopted time demands legislation to provide student-athletes with more time to pursue non-athletic pursuits (Brutlag Hosick, 2016; NCAA, 2017c). This legislation places more restrictions, in addition to the limits just described, on the amount of time that student-athletes can participate in their sport and changes how the NCAA membership defines athletic activity (NCAA, 2017c, 2017d, 2021a).

As it relates to the time that student-athletes can participate in athletics, the time demands legislation requires that institutions provide student-athletes with additional days off from athletics and that institutions notify student-athletes about their practice and competition schedules (NCAA, 2017c, 2017e). In addition to having one or two days off from their sport each week (depending on if the sport is in-season or not), institutions must provide student-athletes with at least 21 additional days off during the academic term (NCAA, 2017c). The intent for providing these additional days off is to allow student-athletes time to pursue academic endeavors and meet social obligations (NCAA, 2017c). Another change that the NCAA membership adopted includes that institutions must give student-athletes adequate notice

of the scheduled time of athletically related activities so they can plan their educational and social activities to fit their schedule (NCAA, 2017e).

One of the most interesting changes that the NCAA membership adopted in 2017 to regulate the amount of time that student-athletes participate in their sport was expanding the types of activities included in the time limitations legislation. Before adopting the times demand legislation in 2017, the NCAA defined athletically related activity as activities with an athletic purpose (e.g., practice, competition, and weight training; NCAA, 2021a). When proposing changes to the legislation on time limitations, the NCAA membership recognized a disconnect between the legislation and the amount of time student-athletes reported spending on their sport (NCAA, 2017d). As previously described, the legislation requires that student-athletes spend no more than 20 hours a week in-season and eight hours a week out of season on their sport (NCAA, 2021a). However, research has identified that student-athletes' reported spending 34 hours a week in-season and 33 hours a week out of season on athletic activities (NCAA, 2020a).

The NCAA membership addressed this disconnect by expanding the activities included in the time limitations legislation to include non-athletic activities associated with a student's sport (NCAA, 2017d). These activities include recruiting, fundraising, media, and community service, to name a few (NCAA, 2021a). The legislation that is currently in place still limits student-athletes' participation in athletic activity (e.g., practice and competition) to 20 hours a week in-season and eight hours a week out of season (NCAA, 2021a). However, the legislation now specifies that on student-athletes' days off, institutions cannot require them to participate in any activity (athletic or non-athletic) that is associated with their sport (NCAA, 2021a).

Student-athletes must meet various academic and athletic requirements to remain eligible to participate in their sport and receive athletically related financial aid (NCAA, 2021a). The

following section discusses the eligibility requirements and the research on the impact of these requirements on student-athletes' experiences.

Academic and Athletic Eligibility Requirements

Division I student-athletes must meet specific academic eligibility requirements, including earning a minimum number of credit hours each semester, earning a minimum percentage toward their degree, and meeting specific GPA requirements (NCAA, 2021a). Additionally, student-athletes must complete their athletic participation within five years of beginning their undergraduate careers (NCAA, 2021a).

Student-athletes must maintain adequate progress toward earning their degree. The NCAA Division I manual (2021a) outlines the minimum standards that student-athletes must meet to demonstrate they are maintaining progress toward their degree. This legislation specifies that student-athletes must earn a minimum of six credit hours each semester and 18 credit hours each academic year. After their first year of full-time collegiate enrollment, student-athletes must have earned a minimum of 24 credit hours. Student-athletes also must earn a minimum of 40% of their degree after their second year of enrollment, 60% after their third year, and 80% after their fourth year. Finally, the legislation specifies that student-athletes must earn at least 90% of the GPA required for graduation after their first year of enrollment, 95% after their second year, and 100% after their third year. Additionally, after their first year of enrollment, student-athletes must meet the minimum GPA requirement every semester.

Studies have examined the impact of athletic eligibility requirements on student-athletes' academic experiences, specifically their choice of major and their attitudes toward the eligibility requirements. Kulics et al. (2015) surveyed student-athletes at Division I institutions to examine if the academic eligibility requirements impacted students' choice of major. The researchers

found that 84% of the participants reported that athletic eligibility requirements were not the primary reason they chose their major, and most participants reported choosing their major based on their interests. In a study conducted by Potuto and O' Hanlon (2007) that also examined the experiences of Division I student-athletes, the researchers found similar findings, with 83% of participants in their study reporting that they chose their major for reasons unrelated to athletics.

However, it is interesting to note that Kulics et al. (2015) found that student-athletes reported a mix of positive and negative views about meeting progress toward degree requirements. Some participants reported that the requirements helped them stay focused on graduating on time. On the other hand, some participants reported that the eligibility requirements caused them to feel anxious about choosing their major. The researchers found that student-athletes in women's sports expressed the greatest amount of fear and anxiety about meeting academic eligibility requirements.

In addition to meeting academic requirements, the NCAA legislation specifies that Division I student-athletes must complete their athletic participation within five years of beginning their undergraduate careers (NCAA, 2021a). The NCAA membership recognized that limiting student-athletes' participation to five years may discourage some student-athletes from taking a semester or longer to pursue an internship or study abroad (NCAA, 2017a, 2017b). The NCAA membership adopted legislation to exempt the time a student-athlete participates in an internship or study abroad program from the five-year limitation to encourage more student-athletes to participate in these activities (NCAA, 2017a, 2017b). In other words, the time that a student-athlete has to participate in collegiate athletics may extend beyond the five-year limit by the amount of time that a student is away from campus participating in an internship or studying abroad (NCAA, 2021a). Additionally, the legislation exempts from the team limitation

the financial aid of student-athletes participating in internships or study abroad, allowing the student-athlete to maintain their athletic financial aid while participating in these programs (NCAA, 2021a).

The next section reviews another unique aspect of the student-athlete experience, the influence of student-athletes' coaches and teammates.

Influence of Coaches and Teammates

Studies have found that student-athletes' relationships with their coach can significantly impact their collegiate experiences (Potuto & O'Hanlon, 2007; Yukhymenko-Lescroart et al., 2015). Potuto and O'Hanlon (2007) found that 85% of student-athletes viewed their coach as a positive influence on their academic goals. However, only 66% of student-athletes perceived that their coach feels it is very important for them to graduate (Potuto & O'Hanlon, 2007). A study conducted by Yukhymenko-Lescroart et al. (2015) that included student-athletes in all of the NCAA's three divisions found that student-athletes who perceived their coach to practice ethical leadership was positively related to their satisfaction with their college choice. Yukhymenko-Lescroart et al. defined ethical leadership as a coach who is honest, trustworthy, caring, open to input, respectful, and can influence these types of behaviors in others.

Moreover, the relationships student-athletes have with their coach may influence their decision-making (Kimball, 2007). In a qualitative study conducted by Kimball (2007), student-athletes at a Division I university reported they were more likely to consider their coach when making decisions if they had a relationship of mutual care, respect, and trust. However, students in this study also reported that the structure of collegiate athletics, including that the coach dictates their daily schedule by identifying when they go to practice, class, and other academic obligations, made them feel like they had no control over these types of decisions.

Interestingly, student-athletes in this study reported that they accepted not having control over these decisions because they understood these restrictions come with being a student-athlete.

Student-athletes' relationships with their teammates can also be influential on their experiences (Kimball, 2007; Potuto & O'Hanlon, 2007). Participants in the study conducted by Kimball (2007) reported that their teammates were like family, and they supported each other to work hard and do their best. Kimball also found that student-athletes' relationships with their teammates influenced their decision-making, as the participants in the study reported that being a part of a team meant making compromises for their teammates. Potuto and O'Hanlon (2007) also found that 80% of the student-athletes in their study reported that their teammates provide social and emotional support that helps them succeed. Finally, Kimball (2007) concluded that getting support from teammates contributes to the enjoyment and fun that student-athletes experience during their collegiate careers.

The student-athlete population is unique; therefore, it is important to study the experiences of this student population. Examining student-athletes' engagement provides insight into the quality of students' undergraduate experiences (Kuh, 2003). The next section reviews the studies on student-athlete engagement.

Student-Athlete Engagement

There are a limited number of studies on student-athlete engagement, and most studies focus primarily on making comparisons between athletes and non-athletes and sport types on levels of engagement and achievement of desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016; Umbach et al., 2006). These studies have found that athletes are as engaged in educationally purposeful activities as their non-athlete peers, and their engagement is associated with gains in desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu,

2016; Umbach et al., 2006). To be clear on the student groups that I am referring to in this section, I refer to students who participate in athletics as athletes and students who do not participate in athletics as non-athletes.

Levels of Engagement

Using NSSE data, Umbach et al. (2006) compared first-year athletes to their non-athlete peers in terms of engagement and found no differences between the groups; however, athletes perceived their campuses to be more supportive than their non-athlete peers. Umbach et al. also compared levels of student-athlete engagement across the three NCAA division types and found no difference in engagement between institution types. Also, using NSSE data, Rettig and Hu (2016) found similar findings in that athletes in low-profile and high-profile sports did not differ from their non-athlete peers in active and collaborative learning and level of academic challenge. However, compared to non-athletes, Rettig and Hu found that student-athletes reported higher scores for enriching educational experiences, student-faculty interaction, and supportive campus environment. When comparing athletes in low-profile to high-profile sports in terms of levels of engagement, Rettig and Hu found no differences between these sport types.

It is important to note that both studies just discussed examined NSSE data from the first version of the survey. Thus, as was previously described, the variable, enriching educational experiences, is a composite score of several high-impact practices (NSSE, 2013). Rettig and Hu (2016) cautioned that examining student-athletes' participation in one category that encompasses several enriching educational experiences does not provide a clear picture of athletes' participation in learning opportunities inside and outside the classroom. More specifically, Rettig and Hu discussed that it is not surprising that athletes in their study had higher scores for enriching educational experiences given that athletes are likely to engage with diverse

populations on a regular basis due to their participation in their sport, and many student-athletes participate in community service activities because the athletic department requires it. To address this limitation identified by Rettig and Hu, I examined data from NSSE 2.0, which measures student-athletes' participation in specific high-impact practices instead of measuring one category for enriching educational experiences, which provides more accurate information.

In addition to comparing levels of engagement between student types, studies have also examined student-athlete engagement and the achievement of desired college outcomes.

College Outcomes

The studies just discussed on student-athlete engagement also compared student-athletes to non-athletes on gains in desired college outcomes, including personal and social development, practical competence, satisfaction, and grades (Rettig & Hu, 2016; Umbach et al., 2006). In the study conducted by Umbach et al. (2006), athletes reported greater gains in personal and social development and practical competence than non-athletes. Rettig and Hu (2016) made a similar comparison in their study; however, they found that low-profile and high-profile athletes did not differ from non-athletes on gains in personal and social development or gains in practical competence. However, Rettig and Hu found that high-profile athletes reported significantly lower scores for overall satisfaction with the college experience and grades compared to both low-profile and non-athletes.

Studies on student-athlete engagement have also examined the relationship between engagement indicators and gains in desired college outcomes. Overall, these studies have found that higher levels of engagement are associated with gains in desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016). Gaston Gayles and Hu (2009) examined NCAA Division I first-year student-athletes' engagement in educationally purposeful activities and

found engagement indicators were positively related to student-athletes' affective and cognitive gains. In the study conducted by Rettig and Hu (2016), the researchers found that student engagement indicators were positively related to student-athletes' gains in personal and social development, practical competence, grades, and overall satisfaction with the college experience.

Most studies on student-athlete engagement focus primarily on comparing athletes and non-athletes and sport types on levels of engagement and achievement of desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016; Umbach et al., 2006). This study adds to the literature by extending the examination of student-athlete engagement beyond making comparisons. This study explored the relationship between student engagement and participation in high-impact practices among the NCAA Division I student-athlete population.

The next section reviews the literature on student-athletes' participation in high-impact practices, specifically internships and study abroad.

Student-Athletes' Participation in Internships and Study Abroad

As discussed in Chapter 1, student-athletes' participation in internships and study abroad is not widespread, with 31% of student-athletes across all three NCAA divisions participating in internships and 15% participating in study abroad (Gallup, 2020). Studies on student-athletes' participation in high-impact practices, including internships and study abroad, focus primarily on the barriers to their participation. Similar to the studies with other student populations previously discussed, these studies found that lack of time and resources are barriers among the student-athlete population (Ishaq & Bass, 2019; Potuto & O'Hanlon, 2007). Additionally, studies have found that coaches' attitudes (Ishaq & Bass, 2019), the pressure to meet athletic responsibilities (Hatteberg, 2020), and athlete identity (Murphy et al., 1996) may create barriers to student-athletes' participation in these activities.

Ishaq and Bass (2019) interviewed 11 athletic counselors and found limited time and resources within the athletic department to be barriers to implementing high-impact practices, including internships and study abroad. In a national study conducted by Potuto and O'Hanlon (2007) on the collegiate experience of student-athletes, 70% of the student-athletes in the study reported that they could not participate in some educational opportunities, including internships and study abroad, because of their time commitments to athletics. In a study that specifically examined barriers to student-athletes' participation in study abroad, Watson-Hall (2017) found that lack of time, cost to participate, and inability to fit study abroad into their degree program are barriers.

In the study conducted by Ishaq and Bass (2019), the researchers also found that coaches' attitudes that emphasize athletic obligations over participation in high-impact practices are barriers. Hatteberg (2020) found similar findings in a qualitative study among 56 athletes from a large NCAA Division I university. Participants reported that they could not participate in activities like internships or study abroad because they felt pressured by their institution and coaches to meet their athletic responsibilities.

Furthermore, student-athletes who identify strongly with their role as an athlete may be less likely to seek out internships. In a study conducted by Murphy et al. (1996), the researchers found that participants who reported high athletic identity had lower career maturity. The researchers concluded that student-athletes who identify strongly with their role as an athlete might be less likely to explore non-sport career options.

Studies on student-athletes' participation in internships and study abroad have focused on barriers to their participation. Student-athletes face the previously discussed barriers to being involved in internships and study abroad that impact all college students. However, studies have

found that student-athletes' participation in their sport may create additional barriers (Hatteberg, 2020; Ishaq & Bass, 2019; Murphy et al., 1996; Potuto & O'Hanlon, 2007). While understanding these barriers is important, in this study, I looked beyond barriers to examine the relationship between students' engagement and their participation in internships and study abroad. Findings from this study inform institutions on how to facilitate an environment that encourages student-athletes to participate in these activities.

Chapter Summary

This chapter reviewed the literature on student engagement and high-impact practices, included a brief overview of NSSE, and discussed the characteristics of the student-athlete population and unique aspects of their educational experiences.

Studies have found that student engagement is related to students' academic success (Kuh et al., 2008), persistence (S. Hu, 2011; Kuh et al., 2008), and learning and development (Astin, 1993; Mayhew et al., 2016; Pascarella & Terenzini, 2005). Student engagement is a construct that is rooted in several theories, including quality of effort (Pace, 1980), theory of student involvement (Astin, 1984), and principles of good practice in undergraduate education (Chickering & Gamson, 1987).

Studies on high-impact practices have found that students' participation in these activities has a positive impact on their learning (Kilgo et al., 2014; Kuh, 2008), sense of belonging (Ribera et al., 2017), engagement (Kuh, 2008; Sweat et al., 2013), and retention (Provencher & Kassel, 2019). Several studies have examined barriers to students' participation in internships and study abroad specifically and found the most common barriers are lack of financial resources (Hora et al., 2020; Thompson et al., 2021; Vernon et al., 2017) and lack of time (Hora et al., 2020; McKinney et al., 2004).

NSSE is a nationally administered survey that measures students' levels of engagement and students' participation in high-impact practices, including internships and study abroad (NSSE, 2013; IUCPR, 2019). This study examined existing data from NSSE to explore the relationship between student engagement indicators and student-athletes' participation in internships and study abroad.

Student-athletes are a unique demographic of students with unique challenges and characteristics. Student-athletes must manage the time demands of athletics (Gaston Gayles, 2009; Jolly, 2008) and meet academic and athletic eligibility requirements (NCAA, 2021a). Additionally, student-athletes' relationships with their coaches and teammates influence their collegiate experiences (Potuto & O'Hanlon, 2007; Yukhymenko-Lescroart et al., 2015).

Studies examining student-athlete engagement focus primarily on comparing athletes and non-athletes and sport types on levels of engagement and achievement of desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016; Umbach et al., 2006). These studies have found that athletes are as engaged in educationally purposeful activities as their non-athlete peers, and their engagement is associated with gains in desired college outcomes (Gaston Gayles & Hu, 2009; Rettig & Hu, 2016).

The next chapter discusses the methods I used to conduct this study on examining the relationship between student engagement indicators and participation in high-impact practices among NCAA Division I student-athletes.

CHAPTER III

METHODOLOGY

In this chapter, I discuss the methodology used in this study, beginning with my worldview as it influenced the decisions related to the design of this study. The chapter then reviews the research design, the population of interest in this study, and the sampling procedure. Next is a discussion of the data collection procedure, which includes a description of the National Survey of Student Engagement (NSSE) and the process to administer NSSE. Next, the chapter describes the variables of interest in this study and my approach to examining the reliability and validity of the data. A discussion of my approach to analyzing the data follows. This chapter then reviews this study's delimitations, limitations, and assumptions. Finally, the chapter concludes by discussing my positionality and the ethical considerations in this study.

As discussed in Chapter 1, a core principle of the NCAA membership is that institutions are responsible for creating an environment where the primary emphasis is on a student-athlete's academic experience (NCAA, 2021c). Moreover, the NCAA membership has enacted legislation to provide flexibility in eligibility and financial aid rules to encourage institutions to establish internships and study abroad programs (NCAA, 2017a, 2017b). The NCAA membership has also enacted legislation to allow student-athletes time to participate in these activities (Brutlag Hosick, 2016; NCAA, 2017c). Research has found that student engagement is related to students' academic success (Kuh et al., 2008), persistence (S. Hu, 2011; Kuh et al., 2008), and learning and development (Astin, 1993; Mayhew et al., 2016; Pascarella & Terenzini, 2005). Furthermore, studies have found that students who participate in high-impact practices benefit from gains in learning and development (Kilgo et al., 2014; Kuh, 2008), an increased sense of belonging (Ribera et al., 2017), and higher retention (Provencher & Kassel, 2019). Despite the

clear benefit of these practices and the priority the NCAA membership places on student-athletes participating in these experiences, involvement in these activities is low (Gallup, 2020). To understand how to create an environment that encourages student-athletes to participate in high-impact practices, researchers need to examine factors related to these activities.

The purpose of this study was to examine the relationship between student engagement indicators and student-athletes' participation in high-impact practices, specifically internships and study abroad. The following research questions guided this study:

1. What is the relationship between student engagement indicators and participation in internships among NCAA Division I student-athletes?
2. What is the relationship between student engagement indicators and participation in study abroad among NCAA Division I student-athletes?

The student engagement conceptual framework informed my decisions about the methods to conduct this study and the interpretation of the data. As discussed in Chapter 1, Kuh (2003) has defined student engagement as students' time and effort toward educationally purposeful activities, like studying and practicing a subject, and what the institution does to encourage students to participate in these activities. The student engagement conceptual framework directed my attention to examining if what the student does and what the institution does is related to student-athletes' participation in internships and study abroad (Kuh, 2003). Using student engagement indicators as independent variables in this study allowed me to examine this relationship.

Researcher's Worldview

I approached this study through the postpositivist paradigm. The postpositivist paradigm stresses that data and evidence collected through careful and objective measurement produce

knowledge of reality within a specified level of probability (Creswell & Creswell, 2018; Mertens, 2010). In the postpositivist paradigm, researchers can understand reality by reducing ideas into discrete variables to examine their relationships (Creswell & Creswell, 2018). In this study, I used a quantitative measure of the variables and maintained objectivity by analyzing a random sample of students using data from NSSE. Furthermore, conducting this study through the postpositivist paradigm indicates the need to eliminate alternative explanations for the findings (Mertens, 2010), which I did by addressing validity and reliability.

Research Design

This study used a non-experimental survey research design using existing data from NSSE. This study utilized data from the 2019 administration of NSSE. The NSSE instrument is a cross-sectional survey that asks first-year and senior undergraduate students to self-report their behaviors and opinions related to their undergraduate experience (IUCPR, n.d.-f). The data collection section of this chapter includes more specific details about NSSE.

According to Dimitrov (2013), "survey research is intended to provide systematic and accurate description(s) of characteristics for a population of interest" (p. 41). Additionally, the purpose of survey research is to examine relationships among variables, including people's opinions and behaviors (Dimitrov, 2013). The aims of survey research align well with this study because the primary purpose was to examine the relationship between students' engagement behaviors and opinions about the campus environment and their participation in internships and study abroad. Moreover, a non-experimental survey research design was the most appropriate method for this study because I did not manipulate the variables to determine their effect (Dimitrov, 2013). Instead, the objective was to examine naturally occurring variables that include students' behaviors and opinions related to their undergraduate experiences.

Analyzing existing data from NSSE was a practical and efficient way to answer the research questions in this study. I decided to analyze existing data from NSSE for two reasons. First, NSSE includes items that align with the objectives of this study. More specifically, NSSE measures student engagement through the student engagement indicators, and there are items on NSSE that measure participation in internships and study abroad (IUCPR, n.d.-b, n.d.-c). Data to answer the research questions already exist in the NSSE data set; therefore, it was most practical to analyze this existing data set. Second, NSSE is a nationally administered survey (IUCPR, n.d.-f), which allowed me to examine a sample of participants from institutions across the United States. In 2019, 294,507 students from 531 institutions responded to the NSSE survey (IUCPR, n.d.-f). If I were to collect the data, I would likely have had a smaller and less representative sample because I cannot recruit students on the same scale and scope as NSSE.

NSSE data were used with permission from the Indian University Center for Postsecondary Research. The Indiana University Center for Postsecondary Research (IUCPR) owns the data collected from NSSE. I obtained permission to use NSSE data by entering into a formal agreement with Indiana University. I entered into this formal agreement by completing the data-sharing application form. The complete data sharing policy and application form is in Appendix A.

Population, Sample, and Participants

The population for this study was NCAA Division I student-athletes in their senior year of undergraduate study who have completed NSSE. Undergraduate students identified by their institution as being in their first-year or senior year participate in NSSE (IUCPR, n.d.-f). However, this study only included seniors because NSSE reports participation in internships and study abroad only for seniors (IUCPR, n.d.-c). In 2019, 1.5 million students were asked to

participate in the NSSE survey, with 294,507 students responding (IUCPR, n.d.-f). Of the total population of students who responded, 53% were seniors (IUCPR, n.d.-f).

I drew the sample for this study from the student population of senior student-athletes enrolled at an NCAA Division I institution who have completed NSSE. NSSE defines a student-athlete as a student who responds yes to the question, "are you a student-athlete on a team sponsored by your institution's athletics department" (IUCPR, 2019, p. 7). To determine the sample size for this study, I worked with IUCPR to understand the total number of participants in the data set who fit the criteria for this study. Furthermore, I conducted a power analysis and considered the objectives of this study (Creswell & Creswell, 2018; Fowler, 2014). I did not engage in stratified sampling because IUCPR provided a random sample of the population who fit the criteria for the study per their institutional policies (A. Miller, personal communication, February 9, 2021).

This sample of the population allowed me to answer the research questions of interest in this study. The primary focus of this study was to discover factors associated with student-athletes' participation in internships and study abroad. Furthermore, I examined these factors through the lens of the student engagement conceptual framework, which directed my attention to analyzing if what the student does and what the institution does is associated with students' participation in these activities (Kuh, 2003). Considering the objectives of this study, I decided to select this sample of participants because it allowed me to analyze the behaviors and opinions of NCAA Division I student-athletes specifically. Moreover, participants in their senior year are more likely to have experience in each student engagement indicator (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment).

Data Collection

As this study examined existing data from NSSE, this section describes the NSSE instrument and the process that IUCPR uses to administer NSSE. As discussed in Chapter 2, there are two versions of NSSE, with the first version used from 2000 to 2012 (IUCPR, n.d.-d). In 2013, researchers at IUCPR updated NSSE, which is the version of the currently administered survey (IUCPR, n.d.-d). NSSE includes 39 questions measuring student engagement, participation in high-impact practices, and students' opinions on their educational experience (IUCPR, 2019). Several questions on the NSSE survey also ask students to self-report demographic information (IUCPR, 2019).

NSSE measures student engagement through 10 engagement indicators linked to students' learning and development (NSSE, 2013). The engagement indicators include higher-order learning, reflective and integrative learning, learning strategies, quantitative reasoning, collaborative learning, discussions with diverse others, student-faculty interactions, effective teaching practices, quality of interactions, and supportive campus environment (IUCPR, 2019). Reports that discuss the results from NSSE group these 10 indicators into four themes: (a) academic challenge, (b) learning with peers, (c) experiences with faculty, and (d) campus environment (NSSE, 2013).

The NSSE survey also includes questions that ask students to report on their participation in six high-impact practices: (a) service-learning, (b) learning communities, (c) research with faculty, (d) internships or field experience, (e) study abroad, and (f) culminating senior experiences (IUCPR, n.d.-c).

IUCPR works with participating institutions to conduct NSSE annually (Kuh, 2009a). Institutions recruit participants to participate in NSSE predominantly through email messaging

(IUCPR, n.d.-h). Participants receive an invitation to participate in the survey and up to four email reminders; however, recruiting participants by mail is available for those few schools that wish to use this option (IUCPR, n.d.-f). Institutions recruit participants from a census of all first-year and senior students seeking a bachelor's degree or a random selection of students from these groups (IUCPR, n.d.-h). Data collection for NSSE begins in February and ends in May (IUCPR, n.d.-a). All participants complete NSSE online by accessing the survey through an individualized survey link sent via email or a URL where they enter their login credentials (IUCPR, n.d.-h).

Variables

This section provides a detailed description of the variables in this study. This discussion includes a description of each variable, sample items from NSSE that measure each variable, and the measurement scales for each item. Tables 7 and 8 in Appendix B provide a complete list of the independent and dependent variables with each corresponding item on NSSE that measures the variable.

The control variables in this study were student demographic characteristics and included race/ethnicity, sex, major, grades, transfer status (i.e., transfer or non-transfer student), parents' level of education, and student's living arrangement. NSSE measures each of these variables using a nominal scale of measurement (IUCPR, 2019). I decided to include these variables as control variables as other studies on the student-athlete population have consistently used these variables (Gaston Gayles & Hu, 2009; Umbach et al., 2006). Furthermore, the literature on students' participation in internships and study abroad suggests that these variables may be related to students' involvement in these activities (Hora et al., 2020; Institute of International Education, 2021; NAFSA, 2003).

Independent Variables: Four Student Engagement Themes

As discussed, NSSE measures student engagement through 10 engagement indicators grouped into four themes: (a) academic challenge, (b) learning with peers, (c) experiences with faculty, and (d) campus environment (NSSE, 2013). These four student engagement themes were the independent variables in this study. This section describes the four theme areas and the engagement indicators in each theme.

For each engagement indicator, NSSE asks participants to self-report how often they engage in various behaviors during the current school year (IUCPR, 2019). On the NSSE survey, the scale of measurement for each engagement indicator, except for the quality of interactions indicator, is a 4-point Likert scale where 4 indicates high levels of engagement and 1 indicates low levels of engagement (IUCPR, 2019). The scale to measure the engagement indicators mainly consists of the options "Very often = 4, Often = 3, Sometimes = 2, Never = 1" (IUCPR, 2019, p. 1).

Academic Challenge

There are four engagement indicators in the theme academic challenge: (a) higher-order learning, (b) reflective and integrative learning, (c) learning strategies, and (d) quantitative reasoning (NSSE, 2013). Higher-order learning measures students' perceptions of how much their coursework requires complex thinking skills and challenges them to do their best work (NSSE, 2013). Four items on NSSE measure higher-order learning (IUCPR, 2019). An example of an item that measures higher-order learning is, "During the current school year, how much has your coursework emphasized the following: Applying facts, theories, or methods to practical problems or new situations" (IUCPR, 2019, p. 1).

Reflective and integrative learning measures the extent students connect their understanding across courses by considering prior knowledge and experiences, societal issues, and the diverse perspectives of others (NSSE, 2013). Seven items on NSSE measure reflective and integrative learning (IUCPR, 2019). A sample item is, “During the current school year, about how often have you done the following: Connected your learning to societal problems or issues” (IUCPR, 2019, p. 1).

For the engagement indicator, learning strategies, NSSE uses three items to measure a student’s use of strategies to actively engage with course material, including reviewing notes after class, summarizing course material, and identifying key information from course readings (IUCPR, 2019). A sample item that measures this indicator is, “During the current school year, about how often have you done the following: Identified key information from reading assignments” (IUCPR, 2019, p. 2).

Finally, NSSE measures quantitative reasoning using three items that measure a student’s ability to use and understand numerical and statistical information (IUCPR, 2019; NSSE, 2013). A sample item for this indicator is, “During the current school year, about how often have you done the following: Evaluated what others have concluded from numerical information” (IUCPR, 2019, p. 2).

Learning With Peers

The learning with peers theme includes the indicators collaborative learning and discussions with diverse others (NSSE, 2013). Collaborative learning measures how often students work with other students when they need academic help, explain course material to other students, and work with students on course projects or to prepare for exams (NSSE, 2013). Four items on NSSE measure collaborative learning (IUCPR, 2019). A sample item includes the

following question, “During the current school year, about how often have you done the following: Asked another student to help you understand course material?” (IUCPR, 2019, p. 1).

The engagement indicator, discussion with diverse others, includes four items that measure how often students have discussions with people from different backgrounds and those who may hold different perspectives than their own (IUCPR, 2019; NSSE, 2013). A sample item for this indicator is, “During the current school year, about how often have you had discussions with people from the following groups: People of a race or ethnicity other than your own?” (IUCPR, 2019, p. 2).

Experiences With Faculty

Student-faculty interaction and effective teaching practices are the two engagement indicators included in the experiences with faculty theme (NSSE, 2013). Student-faculty interaction measures how often students interact with faculty through discussions about their academic and career plans and how often students work with faculty on activities outside of class (NSSE, 2013). There are four items that measure this indicator, with a sample item being, “During the current school year, about how often have you done the following: Discussed course topics, ideas, or concepts with a faculty member outside of class” (IUCPR, 2019, p. 1).

Five items measure the effective teaching practices indicator (IUCPR, 2019). This indicator measures students’ perceptions of the extent faculty teach with clarity and organization, use examples to explain their points, and provide helpful feedback (NSSE, 2013). A sample item from NSSE includes, “During the current school year, to what extent have your instructors done the following: Clearly explained course goals and requirements” (IUCPR, 2019, p. 2).

Campus Environment

The campus environment theme includes two engagement indicators: quality of interactions and supportive environment (NSSE, 2013). The quality of interactions indicator measures students' perceptions of the quality of their interactions with five different groups of people in their learning environment, including students, academic advisors, faculty, student services, and other administrative staff (IUCPR, n.d.-b; NSSE, 2013). For this indicator, participants report the quality of their interactions on a 7-point Likert scale, with 1 being poor and 7 being excellent (IUCPR, 2019).

The supportive campus environment indicator measures students' perceptions of the extent their institution emphasizes programs and activities that support their growth in cognitive, social, and physical domains (NSSE, 2013). There are eight items to measure this indicator (IUCPR, 2019). A sample item includes, "How much does your institution emphasize the following: Providing opportunities to be involved socially" (IUCPR, 2019, p. 3).

Dependent Variables: Participation in Internships and Participation in Study Abroad

There were two dependent variables in this study: participation in internships and participation in study abroad. Internships involve opportunities for students to be involved with direct experience in a work setting that is typically related to their majors and desired careers (Kuh, 2008). The high-impact practice called diversity and global learning consists of programs and courses designed to facilitate students' learning about cultures and perspectives that are different from their own (Kuh, 2008). This practice can take many forms in the curriculum, including studying abroad (Kuh, 2008). The following item on NSSE measures students' participation in internships and study abroad, "Which of the following have you done or do you plan to do before you graduate: a) Participate in an internship, co-op, field experience,

student-teaching, or clinical placement, b) Participate in a study abroad program" (IUCPR, 2019, p. 3). The scale of measurement for this item is nominal and includes the responses, "Done or in progress = 4, Plan to do = 3, Do not plan to do = 2, Have not decided = 1" (IUCPR, 2019, p. 3).

The next section discusses my approach to analyzing the extent to which the data are reliable and valid measures of student engagement.

Reliability and Validity

Internal consistency reliability estimates for each student engagement indicator on NSSE signal that the scores are reliable, as evidenced by high Cronbach's alpha for each engagement indicator (Dimitrov, 2013; IUCPR, n.d.-e). To assess reliability, I examined internal consistency reliability scores by reviewing Cronbach's alpha for data from the full NSSE data set of seniors who completed the 2019 administration of NSSE, which included 152,028 senior participants from 491 institutions (IUCPR, n.d.-e). Additionally, as I used a subset of the entire NSSE data set, I also analyzed Cronbach's alpha for each engagement indicator and theme using data from the sample of participants in this study (Dimitrov, 2013).

Furthermore, there is evidence that the items on NSSE are valid measures. Results of confirmatory factor analysis using data from randomly selected senior respondents in the 2013 administration of NSSE provide evidence of construct validity for the four student engagement theme areas (Miller et al., n.d.). While there is evidence of construct validity for the engagement themes in the full NSSE data set, I also conducted confirmatory factor analysis of the engagement themes using data from the sample of participants in this study.

Data Analysis

This section of the chapter describes how I analyzed the data in this study. This section begins with a description of how I scored the variables. Next, I discuss how I conducted a

preliminary analysis of the data, which included descriptive and correlational analysis of the variables. Finally, this section concludes with a description of the steps I took to conduct logistic regression to analyze the relationship between the variables and answer the research questions for this study.

As previously described, the four student engagement theme areas (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment) were the independent variables in this study. To score each independent variable, I created a composite score for each variable by averaging the items identified in each student engagement theme. Each independent variable was a continuous variable, with a score of 1 indicating low levels of engagement and higher scores indicating higher levels of engagement (IUCPR, 2019).

The dependent variables in this study were participation in internships and participation in study abroad. To score the variable, participation in internships, I created two nominal categories: participate, scored as a 1, and not participate, scored as a 0. Raw scores of 4, which correspond to the response done or in progress, were coded as a 1. Raw scores 3, 2, and 1, which correspond with the responses plan to do, do not plan to do, and have not decided, respectively, were coded as 0. For the variable, participation in study abroad, I created two nominal categories: participate or plan to participate, scored as a 1, and not participate, scored as a 0. Raw scores of 4 and 3, which correspond to the responses done or in progress and plan to do were coded as a 1. Raw scores of 2 and 1, which correspond with the responses do not plan to do and have not decided were coded as a 0.

As previously discussed, NSSE measures the control variables on a nominal scale (IUCPR, 2019); therefore, I dummy coded each control variable before including them in the analysis.

I used IBM SPSS Statistics 27 software to analyze the data. I began by conducting a descriptive analysis of the control, independent, and dependent variables. I examined the means and standard deviations for each independent variable. I then examined the frequencies and percentages of participants' responses within each category for the dependent and control variables. After conducting a descriptive analysis of the variables, I conducted a correlation analysis using Pearson r and point-biserial correlations to determine the direction and strength of the relationship between the variables (Dimitrov, 2013; Laerd Statistics, n.d.). After conducting descriptive and correlational analysis, I conducted sequential logistic regression to answer the research questions in this study.

My first step in running the sequential logistic regression was to conduct the Hosmer-Lemeshow test to analyze the assumption of linearity of the independent variables and the log odds (Dimitrov, 2013; Keith, 2019). After testing the assumption of linearity, I analyzed the data for multicollinearity among the independent variables, outliers in the data, and influential data points (Keith, 2019). To analyze multicollinearity, I reviewed collinearity diagnostics (Keith, 2019). Furthermore, I analyzed standardized residuals to identify cases that do not fit the model, and I analyzed Leverage values to identify outliers on the independent variables (Keith, 2019). Finally, I analyzed Cook's D values to determine if there were any influential data points in the data (Keith, 2019).

After checking the assumption of linearity and analyzing the data for multicollinearity, outliers in the data, and influential data points, I ran the sequential logistic regression. To run logistic regression, I first entered all of the control variables in Block 1. Then, in Block 2, I entered all of the independent variables. I used logistic regression because it is the most appropriate method considering the dependent variables are categorical (Keith, 2019). Moreover,

using a sequential approach allowed me to determine if adding the independent variables in Block 2 significantly improved the model to predict the outcome of the dependent variables (Keith, 2019).

To analyze the logistic regression results, I interpreted the chi-squared test at the .05 alpha level to determine if the change in chi-square values with the independent variables added to the model was significant (Keith, 2019). Then, I interpreted the regression coefficients to determine the magnitude of the effect of each of the independent variables while controlling for the other variables (Keith, 2019). To determine the statistical significance of each independent variable with all other variables controlled, I interpreted the results of the Wald test at an alpha of .05 (Keith, 2019). Finally, I interpreted the exponentiated regression coefficients for each independent variable to determine the odds of participating in internships and study abroad based on an increase in the independent variables (Keith, 2019). During the data analysis, I also calculated McFadden's pseudo R-squared to determine a descriptive statistic of model fit for each regression equation (Best & Wolf, 2015). Furthermore, I examined classification plots to determine if the .5 cut off score was appropriate for prediction (Schenker, 2020).

Delimitations and Limitations

I recognize the delimitations that I placed on this study, and I further recognize the limitations of this study because of my decisions. The first delimitation I placed on this study was to examine factors related to student-athletes' participation in internships and study abroad through the lens of student engagement. I recognize there may be a multitude of factors that could be related to student-athletes' participation in these activities; however, I limited my focus to examining the relationship between student engagement factors and participation in internships and study abroad. My decision to examine these factors, among many that could

exist, aligns with my postpositivist worldview. The postpositivist worldview suggests that researchers can reduce ideas into discrete variables to understand their relationship (Creswell & Creswell, 2018). Examining student engagement as one possible factor associated with student-athletes' participation in internships and study abroad provides one piece of the puzzle to understanding this phenomenon.

Another delimitation was that I chose to examine the responses of student-athletes identified by their institution as being in their senior year of undergraduate study. As previously discussed, NSSE reports participation in internships and study abroad only for seniors (IUCPR, n.d.-c). I recognize that limiting my analysis to only those student-athletes in their senior year of undergraduate study limits the generalizability of the results of this study beyond this demographic of students.

Additionally, my decision to analyze existing data limited the ability to measure additional items that could help to explain the relationship between the variables. For example, NSSE does not include questions specific to student-athletes' collegiate experiences. NSSE asks participants to report on the quality of their interactions with students and administrators on campus (IUCPR, 2019). However, NSSE does not specifically ask about student-athletes' interactions with their teammates and coaches. Previous research indicates that student-athletes' relationships with their coaches and teammates influence their collegiate experiences (Kimball, 2007; Potuto & O'Hanlon, 2007; Yukhymenko-Lescroart et al., 2015). Additionally, this study did not include some control variables that previous studies suggest may be beneficial when examining internships and study abroad participation. For example, NSSE does not ask specific questions about a student's financial background (e.g., income), which may be helpful

considering that one of the commonly reported barriers to students' participation in internships and study abroad is financial constraints (Hora et al., 2020; NAFSA, 2003).

Finally, a limitation of this study is that students who participate in internships or study abroad may have higher levels of student engagement because of their participation in the high-impact practice. Kuh (2008) discussed that high-impact practices are activities designed to increase students' engagement. This study explored the relationship among the variables but could not determine if student engagement is the cause of student-athletes' participation in internships and study abroad. However, considering this is the first study to examine this relationship among the student-athlete population, the findings from this study contribute to the literature on student engagement and high-impact practices.

Assumptions

I made two assumptions regarding the sample of participants and the data I analyzed in this study. First, I assumed that participants in the NSSE survey who responded yes to the question "are you a student-athlete on a team sponsored by your institution's athletics department" (IUCPR, 2019, p. 16) were members of one of their institutions' NCAA sponsored athletic teams. While the question on the NSSE survey is straightforward, someone who is not a student-athlete on one of the institution's teams could have answered yes to this question. The second assumption I made was that participants who responded to the NSSE survey provided honest and accurate responses to the questions. NSSE data consist of participants' self-reported behaviors and opinions about their undergraduate experiences (IUCPR, n.d.-f, 2019).

Researcher's Positionality

As an undergraduate student, I was a four-year member of my university's varsity women's soccer team. After completing my bachelor's degree, I immediately began working in

my career as an administrator in intercollegiate athletics. My experience as a student-athlete and administrator has been exclusively in the NCAA Division I setting, which I recognize influences my perspective on college athletics.

My experiences as a student-athlete and administrator in intercollegiate athletics have influenced my interest in this study. Through my experiences, I have developed an understanding of the challenges student-athletes face in balancing athletic and academic demands. While I recognize and appreciate these challenges, I have seen firsthand that student-athletes can create a positive balance between athletics and academics. However, student-athletes cannot create this balance alone. Institutions and athletic departments must actively create an environment that supports student-athletes to achieve their educational goals. I firmly believe that NCAA member institutions should establish an environment that promotes student-athletes' learning and personal development. It is this belief that led me to this study. By examining factors related to student-athletes' participation in internships and study abroad, my goal was to discover information to inform the NCAA membership on how to meet its ongoing commitment to place a primary emphasis on student-athletes' academic experiences (NCAA, 2021c).

Ethical Considerations

This section of the chapter discusses the ethical issues I considered and addressed as I conducted this study. I considered ethical issues throughout the study, including in the design, data collection and analysis, and reporting of data. Furthermore, throughout this study, I committed to the ethical standards established by the Belmont Report for human subjects research (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979) and those of the American Psychological Association (2017).

Before I began data analysis, I received IRB approval from Kent State University by completing the level I exemption application under category four, as this study used existing data (Kent State University, 2019). Additionally, IUCPR owns the data collected from NSSE, and I demonstrated my commitment to following IUCPR's policies and procedures by following the parameters in the data sharing agreement.

I also took several steps to protect the participants in my study by ensuring participants' confidentiality. To ensure confidentiality, IUCPR removed all participant and institutional identifiers before I received the data. Furthermore, to protect participants in my study, I only requested data from IUCPR that I needed to answer this study's research questions. Finally, I have stored the raw data set on a computer only I can access, and I will retain data related to this study so that it is available for secondary analysis if requested (American Psychological Association, 2017).

The Belmont Report describes that researchers must provide participants with information about the purpose of the study, and participation in research must be voluntary (i.e., informed consent; National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). Participants who completed the NSSE survey received informed consent before they began the survey, and participants had the choice to proceed to the survey or decline to participate (IUCPR, n.d.-g). Additionally, I committed to following ethical practices by accurately and completely reporting this study's results (American Psychological Association, 2017).

Chapter Summary

This chapter discussed the methodology to examine the relationship between student engagement and participation in internships and study abroad among NCAA Division I

student-athletes. This study used a non-experimental survey research design by examining existing data from NSSE. The population for this study included NCAA Division I student-athletes in their senior year of undergraduate study who completed NSSE. Working with IUCPR, which owns the NSSE data, I obtained a random sample of participants from this population.

The independent variables in this study were the four theme areas of student engagement: (a) academic challenge, (b) learning with peers, (c) experiences with faculty, and (d) campus environment (NSSE, 2013). To score each independent variable, I calculated a composite score by averaging the items identified in each student engagement theme. The dependent variables were participation in internships and participation in study abroad. I scored the dependent variables using a nominal level of measurement, and I created two categories for each variable. I also assessed the extent to which the items in the study are reliable and valid measures. Additionally, this chapter described that to analyze the data, I conducted descriptive and correlational analysis for all the variables, and I conducted logistic regression to answer the research questions in this study.

This chapter also discussed the delimitations, limitations, and assumptions of this study. This chapter concluded with my positionality statement and a discussion of the ethical issues and considerations in this study. The next chapter presents the results of the data analyses conducted in this study.

CHAPTER IV

RESULTS

This chapter discusses the results of the data analyses conducted in this study. This chapter begins by providing an overview of the sample size for this study and a discussion of the power analysis results. Next, this chapter reviews multicollinearity among the independent variables, outliers in the data, and influential data points. This chapter then describes the results of the analysis of the reliability and validity of the data. The next section of the chapter provides the results of the descriptive and correlation analyses of the variables. The final section reviews the results of the sequential logistic regression analysis to answer each of the research questions in this study. This section of the chapter also discusses the test of the assumption of linearity for each research question.

This study aimed to discover information to improve National Collegiate Athletic Association (NCAA) Division I student-athletes' educational experiences. The NCAA membership is committed to fostering an environment that emphasizes student-athletes' academic experiences and maintaining athletics as an integral part of the educational experience of student-athletes (NCAA, 2021a, 2021c). Furthermore, the NCAA membership has identified that preparing student-athletes for careers and life after sport is a priority and passed legislation to increase student-athletes' opportunities to participate in internships and study abroad (NCAA, 2016, 2017a, 2017b). Despite the NCAA membership's efforts, student-athlete participation in internships and study abroad is not widespread (Gallup, 2020).

This study examined if there is a relationship between student-athletes' engagement across the undergraduate experience and their participation in internships and study abroad. More specifically, this study examined student engagement indicators as measured by the

National Survey of Student Engagement (NSSE), including academic challenge, learning with peers, experiences with faculty, and campus environment. Findings from this study inform researchers and practitioners of ways to facilitate an environment for student-athletes to participate in internships and study abroad.

The purpose of this study was to use existing data from NSSE to examine the relationship between student engagement indicators and NCAA Division I student-athletes' participation in high-impact practices, specifically internships and study abroad. The following research questions guided this study:

1. What is the relationship between student engagement indicators and participation in internships among NCAA Division I student-athletes?
2. What is the relationship between student engagement indicators and participation in study abroad among NCAA Division I student-athletes?

This study utilized descriptive, correlation, and logistic regression to answer the research questions. The descriptive analysis included the frequencies and percentages for the dependent and control variables and the means and standard deviations for the independent variables. The correlation analysis included a review of the Pearson r and point-biserial correlations to determine the direction and strength of the relationships between the variables (Dimitrov, 2013; Laerd Statistics, n.d.). The logistic regression analysis included a review of the significance of the chi-squared test and an interpretation of the regression coefficients for each research question. The following sections of this chapter discuss the results of these analyses.

Sample Size and Power Analysis

I drew the sample for this study from the student population of senior student-athletes enrolled at an NCAA Division I institution who have completed NSSE. NSSE defines a

student-athlete as a student who responds yes to the question, “are you a student-athlete on a team sponsored by your institution’s athletics department” (Indiana University Center for Postsecondary Research [IUCPR]; IUCPR, 2019, p. 7). Working with IUCPR, which owns the NSSE data, I obtained a random sample of 2,038 participants from this population. I removed incomplete respondents for a sample of 1,794 participants for this study. The sample for this study included student-athletes from 120 NCAA Division I institutions, with 65.5% of the participants enrolled at a public institution and 34.5% enrolled at a private institution.

I conducted a power analysis because it allowed me to understand the sample size necessary to proceed with the study. Conducting the power analysis was important as I used existing data and did not have the option to continue collecting data if the sample was too small. If the sample was too small, I could not proceed with the study as planned, and I would need to adjust my sample to include participants from institutions in all three NCAA divisions or adjust my methods.

The result of the a priori sample size calculation using GPower 3.1 given the significance level ($\alpha = .05$), power (.80), odds ratio (1.5), and estimated squared multiple correlation ($R^2 = .25$) with a two-tailed test indicated that the necessary sample size for this study was 277 participants. Using the power analysis results, I determined that the sample of NCAA Division I student-athletes I received from IUCPR was large enough to proceed with the study as planned.

The following section of this chapter describes the results of the review of multicollinearity among the independent variables, outliers in the data, and influential data points.

Multicollinearity, Outliers, and Influential Data Points

According to Keith (2019), multicollinearity among the independent variables indicates that the variables measure the same or similar constructs. When multicollinearity exists, it is difficult to determine the effects of one variable compared to the others (Keith, 2019). To analyze if multicollinearity exists among the independent variables, I reviewed each variable's tolerance and variance inflation factor (VIF) to determine if the variables correlate at a high level (Keith, 2019).

The values for tolerance and VIF for each variable signaled that multicollinearity among the independent variables was not an issue in this study. According to Keith (2019), tolerance can range from 0 to 1, with values less than .10 indicating that multicollinearity may be a concern. Furthermore, VIF values greater than 10 indicate that multicollinearity may be present (Cohen et al., 2003). Each of the independent variables in this study had a tolerance above .10 and VIF values less than 10: academic challenge (tolerance = .50, VIF = 2.0), learning with peers (tolerance = .71, VIF = 1.40), experiences with faculty (tolerance = .50, VIF = 2.0), and campus environment (tolerance = .73, VIF = 1.36).

I reviewed the data for outliers that do not fit the models by identifying cases with standardized residuals greater than 3 or less than -3 (Schenker, 2020). For the model to test the relationship between student engagement and participation in internships, only one case did not fit the model, as this case had a standardized residual value greater than 3. For the model to test the relationship between student engagement and study abroad, 11 cases had standardized residuals greater than 3. To review outliers on the independent variables, I examined the data for cases with high leverage values and found 29 cases. To address the outliers in the data, I ran the logistic regression analysis with and without these cases included and found that the regression

results did not change much with the outlier cases removed versus when I included them. Considering the similar results, I conducted the regression analysis with the outlier cases included.

Finally, I analyzed Cook's D values to determine if there were any influential data points in the data (Keith, 2019). Cook's D values greater than 1 indicate that a data point may influence the regression coefficients (Dimitrov, 2009). For the model to test the relationship between student engagement and participation in internships, only one case had a Cook's D value greater than 1. For the model to test the relationship between student engagement and study abroad, only two cases had a Cook's D value greater than 1. Again, I ran the analysis with and without these cases included and found the regression results were similar; therefore, I conducted the regression analysis with these cases included.

The next section discusses the results of the analysis to determine the extent to which the data are reliable and valid measures of student engagement.

Reliability and Validity

As discussed in Chapter 3, internal consistency reliability estimates for each student engagement indicator on NSSE signal that the scores are reliable, as evidenced by high Cronbach's alpha for each engagement indicator (Dimitrov, 2013; IUCPR, n.d.-e). As I am using a subset of the entire NSSE data set, I also analyzed internal consistency reliability scores by analyzing Cronbach's alpha for each engagement indicator using data from the sample of participants in this study. Additionally, I analyzed Cronbach's alpha for the items within each student engagement theme area. According to Dimitrov (2009), reliability scores can range from 0 to 1, with reliability scores of .75 or higher generally considered acceptable. Cronbach's alpha scores were above .75 for each student engagement indicator and each student engagement

theme for data from the sample of participants in this study. Table 1 provides Cronbach's alpha for scores from the full NSSE data set for each student engagement indicator. Furthermore, this table provides Cronbach's alpha scores for the data from the sample of participants in this study for each student engagement indicator and each student engagement theme (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment).

Table 1

Internal Consistency Reliability Scores

Student Engagement	Cronbach's Alpha	
	Full NSSE Data Set	NCAA Division I Student-Athletes
Student Engagement Indicators		
Higher Order Learning	.85	.83
Reflective and Integrative Learning	.86	.86
Learning Strategies	.78	.76
Quantitative Reasoning	.83	.81
Collaborative Learning	.85	.78
Discussions with Diverse Others	.89	.87
Student Faculty Interaction	.84	.83
Effective Teaching Practices	.85	.84
Quality of Interactions	.83	.83
Supportive Environment	.88	.88
Student Engagement Themes		
Academic Challenge	-	.90
Learning With Peers	-	.79
Experiences With Faculty	-	.83
Campus Environment	-	.86

Note. Cronbach's alpha for the full NSSE data set of seniors was calculated based on the 2019 administration of NSSE and included 152,028 senior participants from 491 institutions (IUCPR, n.d.-e). Cronbach's alpha is not available for the student engagement themes for data from the full NSSE data set. The Cronbach's alpha scores for the NCAA Division I student-athletes were calculated from the sample of 1,794 NCAA Division I senior student-athletes in this study.

As discussed in Chapter 3, there is also evidence that the items on NSSE are valid measures. Results of confirmatory factor analysis using data from randomly selected senior respondents in the 2013 administration of NSSE provide evidence of construct validity for the

four student engagement theme areas (Miller et al., n.d.). While there is evidence of construct validity for the engagement themes in the full NSSE data set, I also conducted confirmatory factor analysis of the engagement themes, which were the independent variables, using data from the sample of participants in this study.

I conducted confirmatory factor analysis using SPSS Amos 27. I created a model for each student engagement theme (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment) by grouping the engagement indicators NSSE includes in each theme area (NSSE, 2013). Then, for each model, I tested the relationship between the student engagement factors in the model and the underlying items that measure each factor (Dimitrov, 2009). The model for academic challenge included four factors: Higher-Order Learning, Reflective and Integrative Learning, Learning Strategies, and Quantitative Reasoning. The second model was learning with peers and included the factors Collaborative Learning and Discussions With Diverse Others. Experiences with faculty was the third model and included the factors Student-Faculty Interaction and Effective Teaching Practices. Finally, the fourth model was campus environment and included two engagement factors: Quality of Interactions and Supportive Environment. Table 7 in Appendix B lists each factor and the corresponding items on NSSE that measure the factors.

I evaluated each model for the goodness of data fit by considering model fit indices recommended by Dimitrov (2009), including the chi-square to degrees of freedom ratio, goodness-of-fit index (GFI), comparative fit index (CFI), and the root mean square error of approximation (RMSEA). A chi-square to degrees of freedom ratio less than 5 generally indicates good fit, but the chi-square value is sensitive to larger sample sizes (Miller et al., n.d.). Dimitrov (2009) suggested that because of the sensitivity of chi-square values to sample size,

one should also consider other fit indices. Acceptable model fit with the other indices includes GFI greater than .90, CFI greater than .90 (Dimitrov, 2009), and RMSEA less than or equal to .06 (L. Hu & Bentler, 1999).

The indices for the models using data from the participants in this study indicated acceptable data fit for each model. Each model had a GFI greater than .90, and the academic challenge, learning with peers, and experiences with faculty models had a CFI greater than .90. The campus environment model was just below the CFI threshold for acceptable fit. Additionally, each model's RMSEA was above .06, which does not meet the criteria for good model fit. However, each model's RMSEA was below the .10 threshold, where scores above this indicate poor model fit (Dimitrov, 2009).

Overall, the combination of fit indices for the models using data from the full NSSE data set and the models using data from the sample of participants in this study provide evidence of construct validity for the independent variables. Table 2 presents the model fit indices for each student engagement theme from data from the full NSSE data set and the participants in this study.

Table 2

Confirmatory Factor Analysis Model Fit Indices

Student Engagement Theme	χ^2/df	GFI	CFI	RMSEA
		Full NSSE Data Set		
Academic Challenge	187.86	.971	.972	.048
Learning With Peers	106.73	.995	.995	.035
Experiences With Faculty	185.53	.993	.993	.045
Campus Environment	144.99	.980	.977	.048
NCAA Division I Student-Athletes				
Academic Challenge	9.53	.919	.918	.073
Learning With Peers	11.01	.967	.963	.079
Experiences With Faculty	16.65	.938	.932	.099
Campus Environment	16.13	.903	.895	.098

Note. Model fit indices for the full NSSE data set included various sample sizes per model ranging from 61,000 to 89,000 (Miller et al., n.d.).

Descriptive and Correlation Analyses of the Variables

As part of the data analysis, I conducted descriptive and correlation analyses of the control, independent, and dependent variables. I examined the frequencies and percentages of participants' responses within each category for the dependent and control variables and the means and standard deviations for each independent variable. I conducted correlation analysis using Pearson r and point-biserial correlations to determine the direction and strength of the relationship between the independent and dependent variables (Dimitrov, 2013; Laerd Statistics, n.d.).

The control variables in this study were student demographic characteristics and included race/ethnicity, sex, major, grades, transfer status (i.e., transfer or non-transfer student), parents' level of education, and student's living arrangement. Table 3 presents the frequencies and percentages of participants' responses in each category for each control variable.

Table 3

Frequencies and Percentages for Control Variables

Variable	*n*	%
Race/Ethnicity		
American Indian or Alaska Native	7	0.4
Asian	73	4.1
Black or African American	156	8.7
Hispanic or Latina/o	72	4.0
Middle Eastern or North African	10	0.6
Native Hawaiian or Other Pacific Islander	13	0.7
White	1,263	70.4
Another race or ethnicity	15	0.8
Multiracial	153	8.5
I prefer not to respond	32	1.8
Sex		
Female	1,072	59.8
Male	722	40.2
Major		
Arts & Humanities	77	4.3
Biological Sciences, Agriculture, & Natural Resources	181	10.1
Physical Sciences, Mathematics, & Computer Science	85	4.7
Social Sciences	176	9.8
Business	384	21.4
Communications, Media, & Public Relations	83	4.6
Education	93	5.2
Engineering	143	8.0
Health Professions	375	20.9
Social Service Professions	59	3.3
All Other	128	7.1
Undecided, undeclared	10	0.6
Grades		
A	628	35.0
A-	419	23.4
B+	318	17.7
B	266	14.8
B-	89	5.0
C+	46	2.6
C	22	1.2
C- or lower	6	0.3
Transfer status		
Not a transfer student	1,400	78.0
Transfer student	394	22.0

(*table continues*)

Table 3 (continued)

Frequencies and Percentages for Control Variables

Variable	*n*	%
Parents' level of education		
Did not finish high school	23	1.3
High school diploma/G.E.D.	161	9.0
Attended college but did not complete degree	140	7.8
Associate's degree	136	7.6
Bachelor's degree	664	37.0
Master's degree	501	27.9
Doctoral or professional degree	169	9.4
Student's living arrangement		
Campus housing	381	21.2
Fraternity or sorority	27	1.5
Residence within walking distance to campus	780	43.5
Residence farther than walking distance to campus	575	32.1
Not applicable: Entirely online program	24	1.3
Not applicable: Homeless or in transition	7	0.4

The dependent variables in this study were participation in internships and participation in study abroad. Participation in internships had two nominal categories: participate, scored as a 1, and not participate, scored as a 0. For this variable, 57.1% (n = 1,024) of the participants reported they participated in an internship, and 42.9% (n = 770) did not participate. There were two nominal categories for the variable, participation in study abroad: participate or plan to participate, scored as a 1, and not participate, scored as a 0. For study abroad, 24.2% (n = 434) of the participants indicated they participated or planned to participate in study abroad, while 75.8% (n = 1,360) did not participate in study abroad.

Each independent variable (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment) was a continuous variable. Scores for the variables, academic challenge, learning with peers, and experiences with faculty ranged from 1 to 4. Scores for the variable campus environment ranged from 1 to 5.15. For all variables, a score of 1

indicated low levels of engagement, and higher scores indicated higher levels of engagement (IUCPR, 2019). Table 4 presents the means and standard deviations for the independent variables.

Table 4 also presents the results of the correlation analysis of the relationships between the independent and dependent variables. The correlations showed low to moderate positive relationships between the independent variables. According to Dimitrov (2009), generally, correlations between .30 and .50 indicate low relationships, and correlations between .50 and .70 indicate moderate relationships. The correlations between each independent and dependent variable showed that the variables are positively related, but the correlations were very low. Correlations with values less than .30 indicate that the variables have a very low relationship (Dimitrov, 2009).

Table 4

Descriptive Statistics and Correlations for Independent and Dependent Variables

Independent Variable	*M*	*SD*	1	2	3	4	Internship[a]	Study Abroad[a]
1. Academic Challenge	2.8	0.5	-	.52**	.65**	.40**	.11**	.14**
2. Learning With Peers	3.0	0.5		-	.42**	.26**	.15**	.09**
3. Experiences With Faculty	2.8	0.6			-	.51**	.15**	.13**
4. Campus Environment	3.7	0.7				-	.11**	.06*

Note. N = 1,794.
[a]Internship and Study Abroad are the dependent variables.
**$p < .001$, *$p < .05$.

Logistic Regression Analysis

This section of the chapter discusses the logistic regression analysis results to answer the research questions in this study. I conducted binary multiple logistic regression, and I utilized a sequential logistic regression method by entering the control variables in Block 1 and the independent variables in Block 2 to determine if adding the independent variables significantly improved the model to predict the outcome of the dependent variables (Keith, 2019). As part of the analysis, I tested the assumption of linearity of the independent variables and the log odds by conducting the Hosmer-Lemeshow test. Furthermore, I examined classification plots to determine if the .5 cut off score was appropriate for prediction. The following sections discuss the results of the logistic regression analysis.

Research Question 1 Results

The first research question in this study was what is the relationship between student engagement indicators and participation in internships among NCAA Division I student-athletes? The logistic regression results indicated that the baseline model without any variables included was 57.1% accurate in predicting if student-athletes participated in an internship. The control variables I entered into Block 1 were students' demographic characteristics, including race/ethnicity, sex, major, grades, transfer status (i.e., transfer or non-transfer student), parents' level of education, and student's living arrangement. The result of the Hosmer-Lemeshow test for Block 1 was not significant, χ^2 (8) = 8.68, p = .370, which indicates the assumption of linearity was met. The regression equation with the student demographic variables included was significant, indicating that student demographic characteristics predicted participation in internships, χ^2 (40) = 176.44, $p < .001$. The model with the demographic variables improved to 62.9% correct in predicting participation in internships. The results of the Wald test indicated

that the variables race/ethnicity, sex, major, grades, transfer status, and living arrangement were significant, while parents' level of education was not significant. Table 5 presents the regression coefficients, the Wald statistics, and the odds ratio for each variable.

In Block 2, I entered the four student engagement variables (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment). The result of the Hosmer-Lemeshow test for Block 2 was again not significant, χ^2 (8) = 12.78, p = .120, indicating the assumption of linearity was met. Furthermore, I examined the classification plots and determined that the .5 cut off score was appropriate for prediction.

After controlling for student demographic characteristics, the logistic regression results indicated that adding the student engagement variables in Block 2 significantly improved the model to predict participation in internships, χ^2 (44) = 225.01, p < .001. The model improved to 65.3% correct in predicting. Additionally, McFadden's pseudo-R squared was .09. This value is a descriptive statistic of model fit, with values closer to 1 indicating a perfect fit and values closer to 0 indicating a model with no explanatory power (Best & Wolf, 2015).

Finally, the results of the Wald test indicated that the variables learning with peers and experiences with faculty were statistically significant, while academic challenge and campus environment were not significant. The odds ratios for the statistically significant variables, learning with peers and experiences with faculty, indicated the odds for participation in internship increased by 1.49 times and 1.50 times, respectively, for a one-unit increase in each of those variables when controlling for all other predictors. Furthermore, as in Block 1, the student demographic variables race/ethnicity, sex, major, grades, transfer status, and living arrangement were significant, while parents' level of education was not significant. Table 5 presents the regression coefficients, the Wald statistics, and the odds ratio for the variables in Block 2.

Table 5

Results of Logistic Regression Analysis to Predict Participation in Internships

Variable	Block 1				Block 2			
	B	*SE*	Wald	*Exp (B)*	*B*	*SE*	Wald	*Exp (B)*
Constant	-0.90	0.29	9.58*		-3.23	0.49	43.19**	
Academic Challenge					-0.06	0.15	0.16	0.94
Learning With Peers					0.40	0.12	11.91**	1.49
Experiences With Faculty					0.41	0.13	10.07*	1.50
Campus Environment					0.03	0.09	0.11	1.03
Race/Ethnicity								
American Indian or Alaska Native	1.27	0.90	1.98	3.55	0.84	0.91	0.85	2.31
Asian	-1.05	0.28	14.10**	0.35	-1.04	0.28	13.54**	0.35
Black or African American	-0.45	0.19	5.68*	0.64	-0.54	0.19	7.89*	0.59
Hispanic or Latina/o	-0.23	0.26	0.77	0.80	-0.18	0.26	0.49	0.83
Middle Eastern or North African	-0.88	0.67	1.70	0.42	-1.00	0.68	2.16	0.37
Native Hawaiian or Other Pacific Islander	-0.71	0.62	1.31	0.49	-0.83	0.65	1.62	0.44
Another race or ethnicity	-0.87	0.57	2.29	0.42	-0.84	0.58	2.11	0.43
Multiracial	-0.52	0.18	8.21*	0.59	-0.58	0.19	9.79*	0.56
I prefer not to respond	-0.23	0.39	0.35	0.80	-0.19	0.39	0.24	0.83
White[a]								
Sex								
Female vs. Male[a]	0.37	0.11	10.92**	1.45	0.38	0.13	11.42**	1.46
Major								
Biological Sciences, Agriculture, Natural Resources	0.37	0.29	1.63	1.44	0.38	0.29	1.72	1.47
Physical Sciences, Mathematics, Computer Science	0.28	0.34	0.72	1.33	0.19	0.34	0.30	1.20
Social Sciences	0.25	0.29	0.74	1.28	0.26	0.29	0.77	1.29
Business	0.68	0.27	6.52*	1.98	0.66	0.27	5.93*	1.93
Communications, Media, & Public Relations	1.04	0.34	9.19*	2.82	0.91	0.35	6.92*	2.49
Education	1.26	0.35	13.23**	3.53	1.19	0.35	11.49**	3.28
Engineering	0.86	0.31	7.86*	2.36	0.85	0.31	7.44*	2.34
Health Professions	0.55	0.27	4.35*	1.74	0.50	0.27	3.42	1.65
Social Service Professions	0.75	0.37	4.11*	2.12	0.75	0.38	3.93*	2.11
All Other	0.98	0.31	9.78*	2.66	1.01	0.32	10.19*	2.76
Undecided, undeclared	-0.48	0.94	0.27	0.62	-0.42	0.98	0.19	0.66
Arts & Humanities[a]								

(*table continues*)

Table 5 (continued)

Results of Logistic Regression Analysis to Predict Participation in Internships

Variable	Block 1				Block 2			
	B	*SE*	Wald	*Exp (B)*	*B*	*SE*	Wald	*Exp (B)*
Grades								
A-	-0.20	0.14	2.15	0.82	-0.19	0.14	1.79	0.83
B+	-0.32	0.15	4.48*	0.73	-0.28	0.15	3.38	0.76
B	-0.52	0.16	10.69*	0.59	-0.48	0.16	8.69*	0.62
B-	-0.25	0.25	1.03	0.78	-0.19	0.25	0.54	0.83
C+	-1.28	0.36	12.73**	0.28	-1.17	0.36	10.39*	0.31
C	-0.56	0.47	1.38	0.57	-0.45	0.48	0.89	0.64
C- or lower	0.35	0.89	0.15	1.42	0.88	0.93	0.90	2.41
A[a]								
Transfer								
Not a transfer student vs. Transfer student[a]	0.65	0.12	27.69**	1.92	0.66	0.13	26.84**	1.93
Parents' Level of Education								
High school diploma/G.E.D.	-0.12	0.48	0.06	0.89	-0.01	0.49	0.00	0.99
Attended college but did not complete degree	0.01	0.49	0.00	1.01	0.15	0.50	0.09	1.16
Associate's degree	-0.05	0.49	0.01	0.95	0.07	0.50	0.02	1.07
Bachelor's degree	-0.13	0.47	0.08	0.88	0.01	0.47	0.00	1.01
Master's degree	0.00	0.47	0.00	1.00	0.15	0.48	0.10	1.16
Doctoral or professional degree	-0.08	0.49	0.03	0.93	-0.00	0.50	0.00	1.00
Did not finish high school[a]								
Living Arrangement								
Fraternity or sorority	-0.99	0.46	4.61*	0.37	-0.97	0.47	4.23*	0.38
Residence within walking distance to campus	-0.32	0.14	5.38*	0.73	-0.30	0.14	4.71*	0.74
Residence farther than walking distance to campus	-0.35	0.15	5.81*	0.70	-0.34	0.15	5.16*	0.71
Not applicable: Entirely online program	-0.91	0.48	3.69	0.40	-0.80	0.49	2.66	0.45
Not applicable: Homeless or in transition	-1.76	1.13	2.41	0.17	-1.73	1.15	2.29	0.18
Campus housing[a]								

Note. N = 1,794.

[a]Reflects the reference categories for the categorical variables.

**$p < .001$, *$p < .05$.

Research Question 2 Results

The second research question was what is the relationship between student engagement indicators and participation in study abroad among NCAA Division I student-athletes? The logistic regression results showed that the baseline model without any variables included was 75.8% accurate in predicting. I entered student demographic variables into Block 1 as the control variables. For Block 1, the result of the Hosmer-Lemeshow test was not significant, χ^2 (8) = 2.83, p = .945, indicating the assumption of linearity was met. The regression equation with student demographic variables entered into the model was significant, χ^2 (40) = 102.30, p < .001, indicating that student demographic variables significantly improved the model to predict student-athletes' participation in study abroad. The model improved to 76.1% correct in predicting. The results of the Wald test showed that the variables race/ethnicity, sex, and major were significant, while grades, transfer status, parents' level of education, and living arrangement were not significant. Table 6 presents the regression coefficients, the Wald statistics, and the odds ratio for each variable.

In Block 2, I entered the four student engagement variables (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment). The result of the Hosmer-Lemeshow test for Block 2 was not significant, χ^2 (8) = 7.92, p = .442, indicating the assumption of linearity was met. Furthermore, a review of classification plots indicated that the .5 cut off score was appropriate for prediction.

After controlling for student demographic characteristics, the logistic regression results indicated that adding the four student engagement indicators in Block 2 significantly improved the model to predict participation in study abroad, χ^2 (44) = 143.35, p < .001. The results indicated student engagement indicators predicted participation in study abroad as the model

Table 6

Results of Logistic Regression Analysis to Predict Participation in Study Abroad

Variable	Block 1				Block 2			
	B	*SE*	Wald	*Exp (B)*	*B*	*SE*	Wald	*Exp (B)*
Constant	-0.60	0.32	3.59		-3.16	0.55	33.06**	
Academic Challenge					0.45	0.16	7.48*	1.57
Learning With Peers					0.15	0.13	1.35	1.17
Experiences With Faculty					0.22	0.14	2.31	1.24
Campus Environment					0.01	0.10	0.02	1.01
Race/Ethnicity								
American Indian or Alaska Native	0.47	0.88	0.287	1.61	-0.03	0.94	0.00	0.97
Asian	1.25	0.26	22.39**	3.47	1.32	0.27	24.12**	3.75
Black or African American	0.10	0.22	0.22	1.11	0.01	0.22	0.00	1.01
Hispanic or Latina/o	-0.01	0.31	0.00	0.99	0.06	0.31	0.04	1.06
Middle Eastern or North African	1.02	0.68	2.25	2.77	0.93	0.70	1.77	2.54
Native Hawaiian or Other Pacific Islander	-1.03	1.10	0.88	0.36	-1.18	1.14	1.07	0.31
Another race or ethnicity	0.49	0.57	0.73	1.63	0.59	0.59	0.99	1.79
Multiracial	0.20	0.21	0.90	1.22	0.18	0.21	0.76	1.20
I prefer not to respond	0.42	0.41	1.07	1.52	0.49	0.41	1.40	1.63
White[a]								
Sex								
Female vs. Male[a]	0.43	0.13	10.73*	1.53	0.44	0.13	11.35**	1.56
Major								
Biological Sciences, Agriculture, Natural Resources	-0.59	0.30	3.88*	0.56	-0.60	0.30	3.79	0.56
Physical Sciences, Mathematics, Computer Science	-0.61	0.34	2.92	0.54	-0.74	0.37	4.04*	0.48
Social Sciences	-0.61	0.30	4.14*	0.55	-0.69	0.30	5.12*	0.50
Business	-0.33	0.27	1.49	0.72	-0.36	0.27	1.68	0.70
Communications, Media, & Public Relations	-0.54	0.35	2.36	0.58	-0.64	0.36	3.20	0.53
Education	-0.93	0.36	6.83*	0.39	-1.03	0.36	8.05*	0.36
Engineering	-0.65	0.32	4.05*	0.52	-0.65	0.33	3.87*	0.52
Health Professions	-1.08	0.28	14.92**	0.34	-1.17	0.28	17.03**	0.31
Social Service Professions	-1.04	0.42	6.07*	0.36	-1.18	0.43	7.62*	0.31
All Other	-1.11	0.35	10.02*	0.33	-1.11	0.36	9.76*	0.33
Undecided, undeclared	-0.34	0.76	0.21	0.71	-0.14	0.80	0.03	0.87
Arts & Humanities[a]								

(*table continues*)

Table 6 (continued)

Results of Logistic Regression Analysis to Predict Participation in Study Abroad

Variable	Block 1				Block 2			
	B	*SE*	Wald	*Exp (B)*	*B*	*SE*	Wald	*Exp (B)*
Grades								
A-	-0.17	0.15	1.27	0.84	-0.13	0.16	0.73	0.88
B+	-0.09	0.17	0.26	0.92	-0.02	0.17	0.02	0.98
B	-0.05	0.18	0.07	0.95	0.02	0.19	0.01	1.02
B-	-0.09	0.28	0.11	0.91	0.03	0.29	0.01	1.03
C+	-0.49	0.44	1.26	0.61	-0.35	0.45	0.61	0.71
C	-1.67	1.04	2.59	0.19	-1.64	1.05	2.44	0.19
C- or lower	-1.41	1.28	1.21	0.25	-1.26	1.31	0.93	0.28
A[a]								
Transfer								
Not a transfer student vs. Transfer student[a]	0.06	0.15	0.15	1.06	0.06	0.15	0.19	1.07
Parents' Level of Education								
Did not finish high school	0.72	0.51	2.00	2.06	0.69	0.53	1.72	2.00
High school diploma/G.E.D.	-0.46	0.28	2.79	0.63	-0.38	0.28	1.85	0.68
Attended college but did not complete degree	-0.53	0.29	3.25	0.59	-0.43	0.30	2.17	0.65
Associate's degree	-0.10	0.27	0.12	0.91	-0.01	0.28	0.00	0.99
Bachelor's degree	-0.29	0.20	2.02	0.75	-0.21	0.20	1.01	0.81
Master's degree	-0.16	0.21	0.58	0.86	-0.05	0.21	0.05	0.95
Doctoral or professional degree[a]								
Living Arrangement								
Fraternity or sorority	0.15	0.45	0.11	1.16	0.18	0.46	0.16	1.20
Residence within walking distance to campus	-0.14	0.15	0.89	0.87	-0.13	0.15	0.66	0.88
Residence farther than walking distance to campus	-0.24	0.16	2.23	0.79	-0.22	0.17	1.78	0.80
Not applicable: Entirely online program	0.36	0.48	0.56	1.43	0.50	0.48	1.08	1.65
Not applicable: Homeless or in transition	1.21	0.85	1.99	3.34	1.21	0.87	1.94	3.34
Campus housing[a]								

Note. N = 1,794.

[a]Reflects the reference categories for the categorical variables.

$^{**}p < .001$, $^{*}p < .05$.

improved to 77% correct in predicting. Additionally, McFadden's pseudo-R squared was .07. As previously described, this value is a descriptive statistic of model fit, with values closer to 1 indicating a perfect fit and values closer to 0 indicating a model with no explanatory power (Best & Wolf, 2015).

Finally, the results of the Wald test showed that academic challenge was statistically significant. The other student engagement indicators, learning with peers, experiences with faculty, and campus environment, were not significant. The odds ratio for academic challenge indicated the odds for participation in study abroad increased by 1.57 for a one-unit increase in academic challenge when controlling for all other predictors. Furthermore, as in Block 1, the student demographic variables race/ethnicity, sex, and major were significant, while grades, transfer status, parents' level of education, and living arrangement were not significant. Table 6 presents the regression coefficients, the Wald statistics, and the odds ratio for the variables in Block 2.

Chapter Summary

This chapter discussed the results of the data analyses conducted to answer the research questions in this study. This chapter reviewed the sample size, power analysis results, multicollinearity, outliers, and influential data points. The power analysis results indicated that this study's sample of 1,794 participants was sufficient to conduct the regression analysis. Multicollinearity among the independent variables was not an issue in this study, as the values for tolerance and VIF were acceptable for each variable. A review of the data found outliers and influential data points. However, these cases did not impact the logistic regression results, and I decided to include these cases in the analysis.

Next, this chapter discussed the reliability and validity analysis results. Overall, internal consistency reliability scores and confirmatory factor analysis results indicated that the data are reliable and valid measures of student engagement. Each student engagement indicator and student engagement theme area (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment) had a Cronbach's alpha over .75, indicating the scores are reliable measures of student engagement. Furthermore, I discussed that the results of the confirmatory factor analysis provide evidence of construct validity for the student engagement themes. I tested four models, one for each student engagement theme, to assess the relationship between the student engagement factors in each model and the underlying items that measure each factor (Dimitrov, 2009). The combination of fit indices for each model using data from the full NSSE data set and data from the sample of participants in this study provides evidence of construct validity for the independent variables.

The chapter's next section discussed the descriptive statistics of the variables, including the frequencies and percentages for the dependent and control variables and the means and standard deviations for the independent variables. Additionally, this section discussed the correlation analysis results, which showed low to moderate positive relationships between the independent variables. The relationships between the independent and dependent variables were also positive but very low.

Finally, the chapter discussed the logistic regression results to determine if there is a relationship between student engagement indicators and student-athletes' participation in internships and study abroad. After controlling for student demographic characteristics, student engagement indicators predicted student-athletes' participation in internships. The variables learning with peers and experiences with faculty were statistically significant, while academic

challenge and campus environment were not significant. Student engagement indicators also predicted student-athletes' participation in study abroad, with academic challenge being significant, while the other engagement indicators were not significant.

The next chapter discusses my conclusions of the findings, implications for practice, and areas for future research.

CHAPTER V

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

This chapter begins with a discussion of the findings organized by the two research questions in this study. More specifically, I provide an overview of the results and discuss my conclusions, including how the findings relate to the literature and contribute to the research on student engagement and participation in high-impact practices. Next, this chapter discusses the implications of the findings for theory and practice. Finally, this chapter concludes by discussing recommendations for future research.

This study aimed to discover information to improve National Collegiate Athletic Association (NCAA) student-athletes' educational experiences. The NCAA membership has reaffirmed that a core principle of the association is that institutions must maintain an environment where the primary emphasis is on the student-athlete's academic experience (NCAA, 2021c). Through this study, I sought to discover information to inform the NCAA membership on how to meet its ongoing commitment to place a primary emphasis on student-athletes' academic experiences.

Toward this end, this study used existing data from the National Survey of Student Engagement (NSSE) to examine the relationship between student engagement indicators and participation in high-impact practices, specifically internships and study abroad, among NCAA Division I student-athletes. Student engagement is a measure of students' quality of effort and involvement in educationally purposeful activities inside and outside the classroom and what the institution does that influences students to participate in these activities (Kuh, 2008). High-impact practices are effective educational practices, including internships and study abroad, that impact student learning and retention (Kuh, 2008). This study focused on student-athletes'

participation in internships and study abroad because the NCAA membership prioritized increasing opportunities for student-athletes to participate in these activities as a means to improve the student-athlete experience (NCAA, 2016).

Studies have focused primarily on the barriers to students' participation in internships and study abroad and have found that lack of time and financial constraints are the two most commonly reported barriers (Hora et al., 2020; NAFSA, 2003; Potuto & O'Hanlon, 2007). In response to these barriers, the NCAA membership passed legislation to allow for flexibility in eligibility and financial aid rules to encourage institutions to establish internship and study abroad programs that accommodate the athletic and academic schedules of student-athletes (NCAA, 2017a, 2017b). Despite these legislative changes, however, student-athlete participation in these activities is limited (Gallup, 2020). This study contributes to the research by looking beyond barriers and into new directions and finding a relationship between student engagement indicators and participation in internships and study abroad. Understanding this relationship informs institutions on how to facilitate an environment that supports student-athletes to participate in these activities.

There were two research questions in this study examining the relationship between student engagement indicators and participation in internships and participation in study abroad among NCAA Division I student-athletes. This study utilized descriptive, correlation, and sequential logistic regression analyses to answer the research questions. The logistic regression results indicated that student engagement indicators predicted student-athletes' participation in internships and study abroad after controlling for student demographic variables. The student demographic variables were race/ethnicity, sex, major, grades, transfer status (i.e., transfer or non-transfer student), parents' level of education, and student's living arrangement. The

following sections of this chapter discuss this study's results, implications of the findings for theory and practice, and recommendations for future research.

Discussion for Research Question 1

The first research question in this study was what is the relationship between student engagement indicators and participation in internships among NCAA Division I student-athletes? This section begins by discussing the descriptive analysis results for participation in internships. Then, this section discusses the student demographic variables, which were the control variables in this study. Finally, this section discusses the variables of interest in this study, student engagement indicators.

The dependent variable was participation in internships, which consisted of two nominal categories: participate and not participate. Surprisingly, a higher percentage of student-athletes in this study reported participating in an internship compared to previous studies. The descriptive analysis results indicated that 57.1% of the student-athletes in this study reported they participated in an internship, and 42.9% reported they did not participate. In comparison, according to results from the 2020 administration of NSSE, 50% of undergraduate seniors reported participating in an internship or field experience (NSSE, n.d.). Moreover, a study by Gallup (2020), referenced in Chapter 1, found that only 31% of student-athletes and non-athletes reported participating in an internship.

Student Demographic Characteristics

Student demographic variables were the control variables in this study. Student demographic variables were significant in both blocks of the logistic regression, indicating a relationship between student demographic characteristics and internship participation, consistent with previous literature. I included student demographic variables as control variables because

the literature on students' involvement in internships suggested that these variables may be related to participation (Hora et al., 2020). Moreover, controlling for these variables was consistent with other studies examining the experiences of the student-athlete population (Gaston Gayles & Hu, 2009; Umbach et al., 2006).

While student demographic variables were not the focus of this study, I summarize the findings for the significant variables. The results of the Wald test indicated that the student demographic variables race/ethnicity, sex, major, grades, transfer status, and living arrangement were significant, while parents' level of education was not significant.

For the variable, race and ethnicity, the results indicate that compared to student-athletes who identify as White, the odds for participation in internships decrease for student-athletes who identify as Asian, Black or African American, and Multiracial. Compared to males, the odds for participation in internships increase for females. For the variable academic major, compared to student-athletes who major in arts and humanities, the odds for participation in internships increase for student-athletes in business, communications, education, engineering, social services, and the category all other majors. Furthermore, compared to student-athletes whose grades are mainly A, the odds for participation in internships decrease for student-athletes whose grades are mainly B or C+. Additionally, compared to transfer student-athletes, the odds for participation in internships increase for student-athletes who did not transfer. Finally, compared to student-athletes who live in campus housing, the odds for participation in internships decrease for student-athletes who live in a fraternity or sorority or reside off campus.

Student Engagement Indicators

After controlling for student demographic characteristics, the logistic regression results indicated that adding the student engagement variables (i.e., academic challenge, learning with

peers, experiences with faculty, and campus environment) significantly improved the model to predict participation in internships. Interestingly, the correlations for the relationships between each independent variable and internship participation were positive but very low. However, when I entered the student engagement indicators into the logistic regression together, the regression equation was significant, indicating that the student engagement indicators, in combination, predicted student-athletes' participation in internships.

The significant regression equation suggests there is a relationship between student engagement indicators and participation in internships among NCAA Division I student-athletes. This finding is consistent with previous studies on participation in high-impact practices and student engagement. Studies conducted by Kuh (2008) and Sweat et al. (2013) found a relationship between participation in high-impact practices, including internships, and student engagement among the undergraduate student population.

However, finding a relationship between student engagement indicators and internship participation among the student-athlete population is important. As discussed in Chapter 2, the student-athlete experience is unique as student-athletes must manage the time demands of athletics (Gaston Gayles, 2009; Jolly, 2008) and meet academic and athletic eligibility requirements (NCAA, 2021a). The uniqueness of the student-athlete experience often leads researchers and practitioners to ask whether research findings hold in the student-athlete population. The findings from this study answer that question by finding that a relationship between student engagement indicators and participation in internships exists among the student-athlete population.

After finding statistical significance for the regression equation with the student engagement indicators included, I analyzed the regression coefficients for each independent

variable to determine the magnitude of the effect of each variable while controlling for the other variables (Keith, 2019). The results of the Wald test indicated that the variables learning with peers and experiences with faculty were statistically significant predictors, while academic challenge and campus environment were not significant.

Interestingly, the variable, academic challenge, had a negative regression coefficient. This result indicates that as student-athletes' scores for academic challenge increase, their odds for participation in internships decrease. This finding was not significant, however. The regression coefficient for the variable campus environment was positive, indicating that as student-athletes' scores on this engagement indicator increase, their odds for participation in internships also increase. However, this variable was also not significant. The following sections of this chapter discuss the statistically significant variables: learning with peers and experiences with faculty.

Learning With Peers

Learning with peers is a measure of students' collaborative learning with other students and how often students have discussions with diverse others (NSSE, 2013). More specifically, collaborative learning measures how often students work with other students when they need academic help, explain course material to other students, and work with students on course projects or to prepare for exams (NSSE, 2013). Discussions with diverse others is a measure of how often students have discussions with people from a background different than their own, including people from different races or ethnicities, economic backgrounds, religious beliefs, and political views (IUCPR, 2019; NSSE, 2013).

The regression coefficient for the variable learning with peers was positive and statistically significant in predicting student-athletes' participation in internships. The exponent

of the regression coefficient for this variable indicates that the odds for participation in internships increase by 1.49 times for each one unit increase in learning with peers scores, which is generally considered a small effect size (Rosenthal, 1996).

Although the effect size was small, this finding suggests that student-athletes' interactions with their peers inside and outside the classroom positively influence their decision to seek out and participate in an internship. Finding that student-athletes' peers can be a positive influence is consistent with previous research on student engagement that found students' peer groups are one of the most influential factors related to their gains in learning and development (Astin, 1993; Mayhew et al., 2016; Pascarella & Terenzini, 2005). Furthermore, finding peer groups are influential is consistent with previous studies on the student-athlete population. Previous studies found that student-athletes' teammates influence their decision-making (Kimball, 2007) and provide the emotional and social support they need to succeed (Potuto & O'Hanlon, 2007). However, the findings from this study extend our knowledge about the impact of student-athletes' peer groups. This study discovered that, in addition to their teammates, student-athletes' peers whom they interact with when working on academic coursework and who have different backgrounds than their own might also be influential on their educational experiences.

The next section discusses the variable, experiences with faculty, which is the other statistically significant variable in the regression equation to predict student-athletes' participation in internships.

Experiences With Faculty

The variable, experiences with faculty, is a measure of how often students interact with faculty through discussions about their academic and career plans and how often students work

with faculty on activities outside of class (NSSE, 2013). Additionally, this variable measures students' perceptions of the extent faculty utilize effective teaching practices, including teaching with clarity, using examples to explain their points, and providing helpful feedback (NSSE, 2013).

The regression coefficient for this variable was positive and statistically significant in predicting student-athletes' participation in internships. The exponent of the regression coefficient indicates that the odds for participation in an internship increase by 1.50 times for each one unit increase in experiences with faculty scores, which again is generally considered a small effect size (Rosenthal, 1996).

The effect size was small; however, this finding suggests that student-athletes' interactions with their faculty outside the classroom are positively related to their internship participation. It may be that when student-athletes interact with faculty outside of class to discuss their academic and career plans, they learn about internship opportunities that they may not have considered or been aware of previously. Previous studies on the barriers to participation in internships identified that students often report a lack of opportunities related to their major as a barrier. According to Hora et al. (2020), 42% of participants in their study reported that the lack of internship opportunities in their discipline was one of the top barriers to their participation. Through discussions about academic and career plans, faculty may come to understand student-athletes' career goals and be able to connect them with internship opportunities.

Finding that experiences with faculty was a significant predictor also suggests that faculty behavior is associated with student-athletes' participation in internships. More specifically, perceiving that their faculty use effective teaching practices by teaching with clarity and providing feedback is positively related to student-athletes' participation in internships.

Overall, this study's findings suggest that student-athletes' experiences with faculty positively influence their undergraduate experience through the positive association with their decision to participate in an internship. Finding that students' experiences with faculty can influence their undergraduate experience is consistent with previous research on student engagement. As discussed in Chapter 2, Astin (1993) argued that second to students' peer groups, faculty are the most significant influence on students' learning and development. Furthermore, according to Pascarella and Terenzini (2005), students' interactions with faculty outside of the classroom, where the focus is on their development and expanding classroom discussion, positively impact their cognitive development. Moreover, Astin (1993) suggested that how faculty deliver the curriculum and the amount and quality of contact that faculty have with students impacts their learning and development.

Findings from this study also contribute to the research by extending the knowledge about student-athletes' interactions with their faculty. Previous studies on student engagement among the student-athlete population focused primarily on comparing student-athletes to their non-athlete peers in terms of engagement. These studies found that student-athletes interact with their faculty as frequently or more frequently than their non-athlete peers (Rettig & Hu, 2016; Umbach et al., 2006). The findings from this study extend the understanding of student-athlete and faculty interaction beyond identifying that the two groups interact. This study discovered that the interaction that is taking place with faculty is productive in that it is positively related to student-athletes' decisions to participate in internships.

The following section discusses the results of the second research question in this study to examine the relationship between student engagement indicators and participation in study abroad.

Discussion for Research Question 2

The second research question was what is the relationship between student engagement indicators and participation in study abroad among NCAA Division I student-athletes? Similar to the previous section, this section discusses the descriptive analysis results for participation in study abroad and the student demographic variables. This section then discusses the variables of interest, student engagement indicators.

The dependent variable was participation in study abroad, which consisted of two nominal categories: participate or plan to participate and did not participate. The descriptive analysis results indicated that 24.2% of the student-athletes in this study reported that they participated or planned to participate in study abroad, and 75.8% reported that they did not participate. This finding is consistent with previous data gathered by the Institute of International Education (IIE; IIE, 2020), which found that during the 2018–2019 academic year, 16.1% of the students in the United States pursuing a bachelor's degree studied abroad at some point during their degree program. The percentage of student-athletes participating in study abroad was slightly higher in this study because this study included student-athletes who plan to participate.

Student Demographic Characteristics

Student demographic variables were significant in both blocks of the logistic regression, indicating a relationship between student demographic characteristics and study abroad participation. However, only race/ethnicity, sex, and major were significant predictors, while grades, transfer status, parents' level of education, and living arrangement were not significant. Student demographic variables were not the main focus of this study; however, the findings related to the relationship between race and ethnicity and participation in study abroad were noteworthy.

More specifically, I was surprised that the only significant regression coefficient for the variable, race and ethnicity, was for the category Asian. The exponent of the regression coefficient for this category indicates that the odds for participation in study abroad increase by 3.75 times for student-athletes who identify as Asian. The regression coefficients for all other race and ethnicity categories were not significant.

This finding was surprising considering that according to the IIE (2021) Open Doors report discussed in Chapter 2, during the 2018–2019 academic year, of the 347,099 U.S. students who studied abroad, the majority were White (68.7%). Black or African American students comprised 6.4% of the total population who studied abroad in 2018–2019 (IIE, 2021). Hispanic and Latino or Latina students were 10.9% of the total population participating in study abroad, and Asian, Native Hawaiian, or other Pacific Islander were 8.9% of the total population participating in study abroad in 2018-2019 (IIE, 2021). Considering these findings from IIE, it is surprising that among the student-athlete population examined in this study, the relationship between race and ethnicity and participation in study abroad was only significant for students who identified as Asian.

The variables sex and major were also significant predictors. The results indicate that compared to males, females' odds for participation in study abroad increase. Additionally, compared to student-athletes who major in arts and humanities, the odds for participation in study abroad decrease for student-athletes in physical science, social sciences, education, engineering, health professions, social services, and the category all other majors. The other major categories were not significant, including biological sciences, business, communications, and undecided.

Student Engagement Indicators

After controlling for student demographic characteristics, the logistic regression results indicated that adding the student engagement variables (i.e., academic challenge, learning with peers, experiences with faculty, and campus environment) significantly improved the model to predict participation in study abroad. Similar to the first research question, the correlations for the relationships between each independent variable and study abroad participation were positive but very low. However, when I entered the academic engagement indicators into the logistic regression together, the regression equation was significant, indicating that the student engagement indicators, in combination, predicted student-athletes' participation in study abroad.

The significant regression equation suggests there is a relationship between student engagement indicators and participation in study abroad among NCAA Division I student-athletes. As discussed previously with the first research question, this relationship is consistent with previous studies on the relationship between participation in high-impact practices and student engagement (Kuh, 2008; Sweat et al., 2013).

After finding statistical significance for the regression equation with the student engagement indicators included and controlling for student demographic characteristics, I analyzed the regression coefficients for each independent variable to determine the magnitude of the effect of each variable while controlling for the other variables (Keith, 2019). The regression coefficients for the variables learning with peers, experiences with faculty, and campus environment were positive, indicating that as student-athletes' scores for these engagement indicators increase, their odds for participation in study abroad also increase. However, these variables were not significant. The variable academic challenge was the only significant predictor. The following section discusses this statistically significant variable.

Academic Challenge

Academic challenge measures students' perceptions of how much their coursework challenges them and the extent to which they engage in various academic behaviors and practices (NSSE, 2013). Academic challenge includes four engagement indicators: higher-order learning, reflective and integrative learning, learning strategies, and quantitative reasoning (NSSE, 2013). Higher-order learning measures students' perceptions of how much their coursework requires complex thinking skills and challenges them to do their best work (NSSE, 2013). Reflective and integrative learning measures the extent that students connect their understanding across courses by considering prior knowledge and experiences, societal issues, and the diverse perspectives of others (NSSE, 2013). The engagement indicator, learning strategies, measures students' use of strategies to actively engage with course material, including reviewing notes after class, summarizing course material, and identifying key information from course readings (IUCPR, 2019). Finally, quantitative reasoning is the ability to use and understand numerical and statistical information (IUCPR, 2019; NSSE, 2013).

The regression coefficient for the variable academic challenge was positive and statistically significant in predicting student-athletes' participation in study abroad. The exponent of the regression coefficient for this variable indicates that the odds for participation in study abroad increase by 1.57 times for each one unit increase in academic challenge scores, which is generally considered a small effect size (Rosenthal, 1996).

The effect size was small; however, this finding suggests that perceiving their coursework as challenging and engaging in behaviors and practices that indicate higher levels of academic challenge is positively related to student-athletes' participation in study abroad. More specifically, perceiving that their coursework requires complex thinking skills and challenges

them is positively associated with student-athletes' decisions to participate in study abroad. Moreover, the use of active learning strategies, the ability to use and understand numerical and statistical information, and the extent they make connections in their understanding are positively associated with student-athletes' decisions to participate in study abroad. This finding provides support for previous research, which found that students who reported a higher interest in reading and writing and were more open to diverse ideas were more likely to plan to study abroad (Salisbury et al., 2009).

Overall, the findings in this study suggest that higher levels of academic challenge impact student-athletes through the positive association with their decision to participate in study abroad, which is consistent with previous research on student engagement. As discussed in Chapter 2, Astin (1993) and Pascarella and Terenzini (2005) argued that rigorous coursework, students' time and effort devoted to academic activities, and interactive learning are important factors in students' cognitive and affective development. Moreover, S. Hu (2011) found that students who reported high and middle levels of academic engagement were more likely to persist from their first to their second year than students who reported low levels of academic engagement. S. Hu defined academic engagement as activities associated with academic work, including working and discussing ideas with peers and faculty outside of class and working harder than anticipated to meet the instructor's expectations.

Findings from this study also contribute to the literature by broadening our understanding of the relationship between a student's coursework and study abroad participation. Previous research on barriers to participation identified that curricular requirements in certain majors might make it difficult for students to find time in their schedules and degree programs to fit in a study abroad experience (Lincoln Commission, 2005; NAFSA, 2003). Watson- Hall (2017) also

found that student-athletes reported that the inability to fit study abroad into their degree program was a barrier to their participation. This research suggests that the structure of some degree programs may make it difficult for some students to participate in study abroad. On the other hand, the findings from my study suggest that it is important to recognize that higher academic challenge is positively related to student-athletes' participation in study abroad. Previous research findings and the findings from this study suggest that the relationship between a student-athlete's major and participation in study abroad is complex.

The following sections discuss the implications of the findings for the scholarship on student engagement and high-impact practices and the implications for practice.

Implications for Theory

The findings from this study contribute to the scholarship on student engagement and high-impact practices by helping to understand self-selection bias. Self-selection bias was a limitation raised in previous studies that examined the effectiveness of participating in high-impact practices on student learning and other desired outcomes (Provencher & Kassel, 2019; Ribera et al., 2017). When studying the influence of participating in high-impact practices on retention, Provencher and Kassel (2019) identified that the positive effects of participating in high-impact practices might be due to internal factors related to the student. Provencher and Kassel stated, "students who choose to participate in HIPs may be more motivated or engaged, so their better outcomes may result from those types of internal factors rather than being an effect of the HIP" (p. 235). Ribera et al. (2017) made a similar declaration in their study on the effectiveness of participating in high-impact practices on a student's sense of belonging and institutional acceptance. The researchers identified that a possible limitation is that students with a higher sense of belonging may seek opportunities to participate in high-impact practices.

This study used student engagement indicators as independent variables and found that student engagement indicators predicted participation in internships and study abroad among the student-athlete population. While the findings from this study generalize to the NCAA Division I student-athlete population, the results provide insight into understanding self-selection bias. This study's findings suggest that among the NCAA Division I student-athlete population, more engaged students may be more likely to seek opportunities to participate in these high-impact practices.

Implications for Practice

My goal for this study was to discover information to improve student-athletes' educational experiences. More specifically, I was interested in discovering factors related to student-athletes' participation in internships and study abroad to inform institutions on how to facilitate an environment that encourages student-athletes to participate in these activities. Discovering a relationship between student engagement indicators and participation in internships and study abroad suggests that to facilitate an environment for student-athletes to participate in these activities, institutions need to consider students' engagement across their undergraduate experience.

Student engagement is a construct that focuses on students' academic behaviors and practices, interactions with peers and faculty, and students' perceptions of the campus environment (Wolf-Wendel et al., 2009). The behaviors, practices, and interactions with peers and faculty associated with student engagement can occur in experiences across the student's undergraduate experience in activities both inside and outside the classroom (Kuh, 2008). Discovering a relationship between student engagement indicators and participation in internships and study abroad suggests several implications for practice grounded in the student

engagement indicators that were significant in this study: learning with peers, experiences with faculty, and academic challenge. This section of the chapter discusses the implications for practice and how the findings from this study can inform NCAA legislation.

The first implication for practice is that institutions should create opportunities for student-athletes to learn with their peers. The findings from this study indicate that learning with peers, which includes working with peers to understand coursework and having discussions with diverse others (NSSE, 2013), is related to student-athletes' participation in internships. With this in mind, there are two practices that institutions should adopt to create opportunities for student-athletes to learn with their peers. First, athletic departments should connect student-athletes with tutoring and other academic support services that the university offers to all students. Second, athletic departments should connect with other offices on campus to sponsor and host events and programs that will expose students to people from different backgrounds than their own, including different races or ethnicities, economic backgrounds, religious beliefs, and political views.

The findings from this study suggest that athletic departments should create academic support programs that connect student-athletes with tutoring and other academic support services that the university offers to all students. NCAA legislation requires that Division I institutions make academic support and tutoring services available to student-athletes either through the athletic department or through nonathletic services available to all students (NCAA, 2021a). Many NCAA Division I institutions provide academic support and tutoring entirely through the athletic department and in spaces restricted for only student-athletes to use (Wolverton, 2008). While student-athletes have reported that having resources and spaces specifically for them helps them succeed (Rubin & Moses, 2017), it also limits the opportunities for them to engage with

their non-athlete peers outside of class. I suggest that athletic departments strike a balance by continuing to provide academic support and resources specifically for their student-athletes but also expand their program by integrating university resources into the support program for student-athletes.

To integrate university resources into the support program for student-athletes, the athletic department should encourage student-athletes to use services offered on campus, including activities like peer tutoring and supplemental course instruction available to all students. Additionally, the athletic department should work collaboratively with academic support offices on campus to offer these activities at various times to ensure student-athletes can access them at a time that fits their schedule. Finally, student-athletes should utilize peer tutoring and supplemental instruction in spaces available to all students on campus (e.g., library and academic buildings).

Learning with peers also includes the extent that students have discussions with diverse others (IUCPR, 2019; NSSE, 2013). To increase opportunities for student-athletes to interact with people from different backgrounds than their own, the athletic department should connect with other offices on campus to sponsor and host events and programs that will expose students to people from different backgrounds. For example, the athletic department could co-sponsor events with offices within student affairs, including LGBTQ+, accessibility services, multicultural center, and international student services, to name a few. These events should be open to all students on campus, which can encourage interactions among student-athletes and students from different backgrounds.

The second implication for practice is that athletic department administrators should seek the involvement of faculty in their student-athlete development programs and workshops. NCAA

legislation also requires that Division I institutions offer programs focusing on student-athlete development (NCAA, 2021a). To provide guidance on creating these programs, a task force within the National Association of Academic and Student-Athlete Development Professionals (N4A) identified desired competencies that student-athletes should achieve through student-athlete development programs. Several of the competencies focus on student-athletes' careers and life after sport, including developing their identity after sport, learning the cultural norms of their profession, and communicating professionally (N4A, 2022).

Considering that the findings from this study indicate that student-athletes' experiences with faculty are related to their participation in internships, including faculty in student-athlete development programs may be beneficial. Including faculty in these programs may help student-athletes learn competencies related to their desired professions and careers. Furthermore, by participating in these programs, faculty may come to understand student-athletes' career goals and be able to connect them with internship opportunities.

The third implication for practice is that athletic department administrators should create opportunities for student-athletes to increase their levels of academic challenge. Creating opportunities to increase levels of academic challenge is particularly important to creating an environment that encourages student-athletes to participate in study abroad. The findings from this study suggest that perceiving their coursework as challenging and engaging in behaviors that indicate higher levels of academic challenge is positively related to student-athletes' participation in study abroad.

A way to increase student-athletes' levels of academic challenge is to encourage student-athletes to explore different majors to find one that they perceive requires complex thinking skills and challenges them to do their best work. Encouraging student-athletes to

explore different majors is particularly important for coaches because coaches influence student-athletes' decision making (Kimball, 2007) and can positively influence student-athletes' academic goals (Potuto & O'Hanlon, 2007). Furthermore, encouraging student-athletes to explore different majors is important for academic advisors who work with student-athletes to monitor their academic progress and advise them on their majors. As discussed in Chapter 2, student-athletes must maintain adequate progress toward their degree by earning a minimum number of credit hours each semester and completing a minimum percentage of their degree each year (NCAA, 2021a). It is important for advisors to recognize that there is a relationship between how student-athletes perceive their coursework and their participation in study abroad. Advisors are in a position to encourage student-athletes to pursue majors they find challenging while supporting them to navigate the requirements to maintain progress toward their degree.

Encouraging student-athletes to participate in events and programs, like the ones previously discussed, that expose students to societal issues and the diverse perspective of others is another way that institutions can support student-athletes to increase their levels of academic challenge. Academic challenge includes the extent that students connect their understanding across courses by considering prior knowledge and experiences, societal issues, and the diverse perspectives of others (NSSE, 2013). By attending events and programs that expose them to diverse perspectives, student-athletes will have multiple and diverse experiences to pull from to make connections in their coursework.

Finally, I must note that academic challenge had a negative relationship with participation in internships, though the finding was not significant. Considering this finding, it would be wise for advisors who work with student-athletes to talk with students directly about

their majors and coursework and how this connects with their decision to participate in an internship.

The recommendations just discussed focused primarily on activities that athletic administrators and practitioners can implement; however, coaches also hold an important role in supporting student-athletes to increase their engagement. In addition to encouraging student-athletes to explore different majors, coaches should promote an atmosphere that encourages student-athletes to increase their engagement across the undergraduate experience. Coaches can foster this atmosphere by providing student-athletes time away from their sports responsibilities to attend campus events, use peer tutoring offered by the institution, and engage with their faculty outside of class. Furthermore, coaches should provide student-athletes with information about using campus resources and events. The responsibility for fostering an environment that increases student-athletes' engagement across their undergraduate experience should also include coaches.

Moreover, athletic department leadership should hold coaches accountable for promoting an atmosphere that encourages student-athletes to increase their engagement. Holding coaches accountable for promoting this environment should begin with educating coaches about student-athlete engagement and the resources available to support engagement. NCAA member institutions must provide annual education to coaches regarding legislation and rules compliance (NCAA, 2022). Annual education for coaches should also include information about the value of student-athletes learning with their peers, interacting with faculty, exploring challenging majors, and attending campus events. Furthermore, coaches should receive ongoing education about various campus resources and events so they can promote these things among their student-athletes.

Discovering a relationship between student engagement indicators and participation in internships and study abroad suggests that to facilitate an environment for student-athletes to participate in these activities, institutions need to facilitate ways to increase student-athletes' engagement across their undergraduate experience. The next section of this chapter discusses the recommendations for future research.

Recommendations for Future Research

The findings from this study provide information to understand the student-athlete experience and how to improve it; however, this study provides one piece to a complex puzzle. This section discusses the recommendations for future research to further explore this phenomenon. The recommendations for future research include exploring factors specific to student-athletes' collegiate experiences, including additional demographic characteristics in the analysis, expanding the sample of participants, and further examining factors related to internship and study abroad participation.

Further Explore the Student-Athlete Experience

This study examined existing data from NSSE, a survey designed for institutions to administer to all college students to measure various aspects of their collegiate experiences (Kuh, 2009a). Analyzing NSSE data was a practical and efficient way to answer the research questions. However, analyzing existing data did not allow me to examine some aspects of the collegiate experience specific to student-athletes. Future research on student-athlete engagement should include items unique to student-athletes' experiences.

More specifically, I recommend that future research include items that measure student-athletes' perceptions of their interactions and relationships with their coaches and teammates. Items on NSSE ask participants to report on the quality of their interactions with

faculty, administrators, and peers (IUCPR, 2019). However, no items measure student-athletes' interactions with their coaches and teammates. Previous research indicated that student-athletes' relationships with their coaches and teammates influence their collegiate experiences (Kimball, 2007; Potuto & O'Hanlon, 2007; Yukhymenko-Lescroart et al., 2015). Future research should include items that measure student-athletes' quality of interactions with these groups. Furthermore, NSSE asks participants to report their perceptions of how much their institution emphasizes programs and activities that support their cognitive, social, and physical growth (NSSE, 2013). Future studies should include items that measure student-athletes' perceptions of how much the athletic department emphasizes these activities.

Moreover, some of the student demographic variables in this study were not significant, which may be due to aspects of the collegiate experience that are unique to student-athletes. For example, for both participation in internships and participation in study abroad, parents' level of education was not a significant predictor of participation. Parents' level of education may not be impactful among the student-athlete population because of the amount and type of support that student-athletes' receive through the athletic department. Considering this finding, I recommend that future research include questions that ask student-athletes about the support and resources they receive through the athletic department.

Furthermore, for participation in study abroad, the variable grades was not a significant predictor of participation. Again, there may be aspects of the student-athlete experience that have an impact on this finding. For example, NCAA Division I legislation permits institutions to participate in a foreign tour (i.e., travel to a country outside of the United States for practice and competition) every four years (NCAA, 2021a). It may be that some student-athletes are traveling abroad as part of their athletic team participation. When examining student-athletes'

participation in study abroad, future research should include a question asking them to report if their team has participated in a foreign tour.

Examine Additional Demographic Characteristics

After completing this study, I recommend that future research include additional demographic characteristics that may help further explain the relationship between student engagement and participation in internships and study abroad among student-athletes. More specifically, I recommend that future studies include a student-athlete's sport as a variable in the analysis. This study did not include sport as NSSE does not measure demographic characteristics specific to the student-athlete population. Understanding if the relationship between student engagement and participation in internships and study abroad varies by sport can provide researchers and practitioners with information on how student-athletes' sports participation relates to their educational experiences.

Furthermore, I recommend that future studies include items that measure a student-athlete's financial background (e.g., Pell recipient) and if a student is receiving an athletic scholarship as variables in the analysis. Again, NSSE does not include these items, but they may help further explain the relationship between student engagement and participation in internships and study abroad. Previous research found that students commonly report that financial constraints and a lack of resources are barriers to their participation in these activities (Hora et al., 2020; NAFSA, 2003; Vernon et al., 2017). Including items that measure a student's financial background as control variables in the analysis could help to eliminate alternative explanations for the findings. Moreover, including items that measure a student's financial background and athletic financial aid status will allow researchers to examine if the relationship

between student engagement and participation in internships and study abroad differs by the type of aid a student receives.

Expand the Sample of Participants

The third recommendation is to expand the sample of participants beyond what this study examined by including student-athletes from other academic years and other NCAA divisions. This study examined student-athletes identified by their institution as being in their senior year of undergraduate study. This study examined seniors because NSSE reports participation in internships and study abroad only for seniors (IUCPR, n.d.-c). I recommend that future studies include student-athletes in their sophomore, junior, and senior years of undergraduate study and graduate student-athletes. By examining student-athletes enrolled in these academic years, the findings can generalize beyond those in their senior year. Furthermore, I recommend future studies include these student-athletes, but not those in their first year, because these groups will have had time to gain experience in each student engagement indicator.

Additionally, future studies should examine student-athletes in NCAA Divisions II and III. The NCAA constitution, which governs member institutions in all three divisions (Division I, Division II, Division III), states that each institution must place a primary emphasis on student-athletes' academic experiences (NCAA, 2021c). Considering the emphasis that all NCAA member institutions place on student-athletes' educational experiences, replicating this study by examining student-athletes in the other divisions would be valuable.

Further Explore Factors Related to Internship and Study Abroad Participation

The final recommendation for future research is to continue exploring student-athletes' participation in internships and study abroad to discover additional factors related to their involvement. Previous research on participation in internships and study abroad among the

student-athlete population focused on barriers to student-athletes' participation. Student-athletes reported not participating due to the time commitments to athletics (Potuto & O'Hanlon, 2007) and feeling pressure from their coaches and institutions to meet athletic responsibilities (Hatteberg, 2020). Moreover, studies found that financial constraints were a barrier to student-athletes' participation in these activities (Ishaq & Bass, 2019; Watson-Hall, 2017). While the studies on the barriers to participation are informative, they do not tell us what supports or encourages student-athletes to participate in internships and study abroad. This study found that student engagement indicators are related to student-athletes' participation in these activities. Future research can build on this study by continuing to look beyond barriers to participation to explore factors that support and encourage student-athletes to participate.

Additionally, as it relates to study abroad participation specifically, the findings from this study suggest that participation in study abroad among the student-athlete population needs further investigation. Among the student-athletes included in this study, only 24.2% reported they participated or planned to participate in study abroad, and 75.8% reported they did not participate. Moreover, as previously discussed, it was surprising that only the category Asian was significant for race and ethnicity. These findings suggest that participation in study abroad among the student-athlete population needs further investigation to understand this phenomenon.

Furthermore, with such low numbers of student-athletes participating or planning to participate in study abroad, it may be beneficial to use qualitative methods to understand why student-athletes participate in study abroad from their perspective to discover what they find meaningful. More specifically, researchers should conduct interviews and focus groups with student-athletes who have participated in study abroad to understand their experience and discover new concepts and ideas that support their participation.

Chapter Summary

This chapter discussed this study's findings to answer the research questions, the implications of the findings for theory and practice, and recommendations for future research. The chapter began by discussing the results of the research questions, which examined the relationship between student engagement indicators and participation in internships and participation in study abroad among NCAA Division I student-athletes. The results indicated that after controlling for student demographic characteristics, student engagement indicators, in combination, predicted student-athletes' participation in internships and participation in study abroad. Moreover, the student engagement indicators, learning with peers and experiences with faculty were significant predictors for participation in internships. These findings suggest that student-athletes' interactions with their peers and faculty outside of class may influence their decision to participate in an internship. For study abroad, academic challenge was a significant predictor. This finding suggests that student-athletes' perceptions of how much their coursework challenges them and the extent to which they engage in various academic behaviors and practices may encourage their participation in study abroad.

Next, this chapter discussed the implications of the findings for theory and practice. This study's findings contribute to the scholarship on student engagement and high-impact practices by providing insight into understanding self-selection bias, a limitation raised in previous studies examining the effectiveness of participating in high-impact practices (Provencher & Kassel, 2019; Ribera et al., 2017). Additionally, this chapter discussed several implications for practice grounded in this study's significant student engagement indicators: learning with peers, experiences with faculty, and academic challenge. More specifically, I discussed that institutions and athletic departments should create opportunities for student-athletes to increase their

engagement in these areas. Finally, this chapter discussed the recommendations for future research to continue to explore this phenomenon.

APPENDICES

APPENDIX A

INDIANA UNIVERSITY CENTER FOR POSTSECONDARY RESEARCH DATA SHARING FORM

Appendix A

Indiana University Center for Postsecondary Research Data Sharing Form

Data from projects housed at the Indiana University Center for Postsecondary Research (IUCPR) are available on a limited basis as a source of data for researchers. We hold a primary obligation to protect our participation agreements with our institutional users as well as the confidentiality of the information provided by the respondents according to institutional review board guidelines. IUCPR projects include the National Survey of Student Engagement (NSSE), Faculty Survey of Student Engagement (FSSE), Beginning College Survey of Student Engagement (BCSSE), Law School Survey of Student Engagement (LSSSE), and Strategic National Arts Alumni Project (SNAAP).

Under these agreements, IUCPR may make data in which individual respondents or institutions cannot be identified available to researchers. Results specific to each institution and identified as such will not be made public except by mutual agreement between IUCPR and the institution. This means taking strict measures to protect the identities of the students and institutions that participate in the program. We have a duty to ensure that schools do not have their data used in ways they did not intend.

In addition, as non-subsidized, cost-recovery projects, IUCPR may ask researchers to pay a fair price for the time and effort put into collecting and managing the databases, and for preparing the data for purchase.

Policies Regarding the Sharing of IUCPR Data

1. IUCPR data are made available no sooner than two years after institutional reports are mailed to participating institutions. (For example, data from the 2017 NSSE and FSSE administrations will be available in August of 2019.)
2. To protect the integrity of the database and the confidentiality of our users, we strip all respondent and institutional identifiers from any data set that we share externally. In addition, no open-ended responses will be provided.[1]
3. We may include institution-level information (e.g., Carnegie Classification) but not in a way that individual schools can be identified directly or indirectly. This includes data provided by the researchers to be matched with IUCPR data before removal of school identifiers. Continuous variables (e.g., enrollments) must be collapsed into categories so that specific values cannot be linked back to school names.
4. As a general rule, data sets provided will be random samples in a portion not to exceed one-fifth of the existing data set. However, because some research questions require specific or narrow populations, we will work with the researchers to determine an appropriate sample needed for analysis without releasing the entire data set.

[1] For variables and response options, see the codebooks at each project's website.

5. Researchers are required to acknowledge that the data were used by permission of the Indiana University Center for Postsecondary Research, and to provide a copy of all papers and publications utilizing the data to the Center.

Primary researcher contact information:

Prefix / First Name / Last (Family) Name:				Gender Pronouns (she/her/hers, he/him/his, they/them/theirs, etc.):	
Position Title and Office:					
Institution:					
Address / City / State or Province / ZIP or Postal Code / Country:					
Phone and Email:					
Date:					

Please provide as much detail as possible. You may attach additional documents as well.

1. From which survey project(s) are you looking to get data?
   - ☐ NSSE
   - ☐ FSSE
   - ☐ BCSSE
   - ☐ LSSSE

2. Is this a request for permission to *continue* using data from a previous agreement?
   - ☐ No, this is a *new* data request.
   - ☐ Yes
     - ↳ If yes, what was the date of your previous Agreement?

_____

3. What purposes or research questions guide your study?

4. Please give your study a brief working title:

5. Describe the *variables* you propose to use (items, scales, etc.):

6. Describe the *cases* you need for your study (years, student/faculty characteristics, types of institutions, etc.)

7. Other data that you propose to merge or match with the data:

8. Expected start and end dates for the analysis:

9. The name, title, institution, email, and phone numbers of up to three other researchers that you propose to have access to the data:

10. If you are a student, include the full name, title, email, phone, and institutional affiliation of your faculty advisor (required):

APPENDIX B

SUMMARY OF THE VARIABLES AND CORRESPONDING ITEMS ON NSSE

Appendix B

Summary of the Variables and Corresponding Items on NSSE

Table 7

Independent Variables and Items on the National Survey of Student Engagement (NSSE)

Variable	Item on NSSE
Academic Challenge	
Higher Order Learning	Question 4, items b-e: During the current school year, how much has your coursework emphasized the following? • Applying facts, theories, or methods to practical problems or new situations • Analyzing an idea, experience, or line of reasoning in depth by examining its parts • Evaluating a point of view, decision, or information source • Forming a new idea or understanding from various pieces of information
Reflective and Integrative Learning	Question 2, items a-g: During the current school year, about how often have you done the following? • Combined ideas from different courses when completing assignments • Connected your learning to societal problems or issues • Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments • Examined the strengths and weaknesses of your own views on a topic or issue • Tried to better understand someone else's views by imagining how an issue looks from his or her perspective • Learned something that changed the way you understand an issue or concept • Connected ideas from your courses to your prior experiences and knowledge

Variable	Item on NSSE
Academic Challenge	
Learning Strategies	Question 9, items a-c: During the current school year, about how often have you done the following? • Identified key information from reading assignments • Reviewed your notes after class • Summarized what you learned in class or from course materials
Quantitative Reasoning	Question 6, items a-c: During the current school year, about how often have you done the following? • Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.) • Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.) • Evaluated what others have concluded from numerical information
Learning With Peers	
Collaborative Learning	Question 1, items e-h: During the current school year, about how often have you done the following? • Asked another student to help you understand course material • Explained course material to one or more students • Prepared for exams by discussing or working through course material with other students • Worked with other students on course projects or assignments

Variable	Item on NSSE
Learning With Peers	
Discussions With Diverse Others	Question 8, items a-d: During the current school year, about how often have you had discussions with people from the following groups? • People of a race or ethnicity other than your own • People from an economic background other than your own • People with religious beliefs other than your own • People with political views other than your own
Experience With Faculty	
Student Faculty Interaction	Question 3, items a-d: During the current school year, about how often have you done the following? • Talked about career plans with a faculty member • Worked with a faculty member on activities other than coursework (committees, student groups, etc.) • Discussed course topics, ideas, or concepts with a faculty member outside of class • Discussed your academic performance with a faculty member
Effective Teaching Practices	Question 5, items a-e: During the current school year, to what extent have your instructors done the following? • Clearly explained course goals and requirements • Taught course sessions in an organized way • Used examples or illustrations to explain difficult points • Provided feedback on a draft or work in progress • Provided prompt and detailed feedback on tests or completed assignments

Variable	Item on NSSE
Campus Environment	
Quality of Interactions	Question 13, items a-e: Indicate the quality of your interactions with the following people at your institution • Students • Academic advisors • Faculty • Student services staff (career services, student activities, housing, etc.) • Other administrative staff and offices (registrar, financial aid, etc.)
Supportive Environment	Question 14, items b-i: How much does your institution emphasize the following? • Providing support to help students succeed academically • Using learning support services (tutoring services, writing center, etc.) • Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.) • Providing opportunities to be involved socially • Providing support for your overall well-being (recreation, health care, counseling, etc.) • Helping you manage your non-academic responsibilities (work, family, etc.) • Attending campus activities and events (performing arts, athletic events, etc.) • Attending events that address important social, economic, or political issues

Note. Adapted from *NSSE 2019 codebook: Core U.S. survey* (p.1-13), by Indiana University Center for Postsecondary Research, 2019, Indiana University (https://nsse.indiana.edu/nsse/working-with-nsse-data/data-codebooks/py/data-codebooks-2019.html).

Table 8

Dependent Variables and Items on the National Survey of Student Engagement (NSSE)

Variable	Item on NSSE
Participation in internships	Question 11, item a: Which of the following have you done or do you plan to do before you graduate? • Participate in an internship, co-op, field experience, student teaching, or clinical placement
Participation in study abroad	Question 11, item d: Which of the following have you done or do you plan to do before you graduate? • Participate in a study abroad program

Note. Adapted from *NSSE 2019 codebook: Core U.S. survey* (p.3), by Indiana University Center for Postsecondary Research, 2019, Indiana University (https://nsse.indiana.edu/nsse/working-with-nsse-data/data-codebooks/py/data-codebooks-2019.html). Copyright 2018 by Trustees of Indiana University.

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