ABSTRACT

James L. Coker, THE INFLUENCE OF NONCOGNITIVE SKILL DEVELOPMENT ON THE SENSE OF BELONGING OF FIRST-YEAR STUDENTS (Under the direction of Dr. Marjorie Ringler). Department of Educational Leadership, March 2019.

The purpose of this study was to determine if developing noncognitive variables influenced the sense of belonging in first-year students. The literature suggests sense of belonging could be defined from either a psychological or behavioral perspective. Either definition recommends that colleges and universities implement high-impact practices or improve student engagement within the first-year to improve sense of belonging. Participants were solicited from two first-year seminar courses and were asked to complete two survey instruments measuring noncognitive variables and sense of belonging. The both survey instruments were analyzed separately to determine the average scores on eight noncognitive variables and to measure the sense of belonging within each participant. A correlation study was conducted between the survey instruments to identify if a significant relationship existed between the noncognitive variables and two sense of belonging constructs. The results indicated that there was a significant relationship between many of the noncognitive variables and that may influence sense of belonging in first-year students.

THE INFLUENCE OF NONCOGNITIVE SKILL DEVELOPMENT ON THE SENSE OF BELONGING OF FIRST-YEAR STUDENTS

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DEDICATION

I dedicate this work to the brother who I lost at the start of this program, LTJG Isiah Edward Coker, United States Navy. From the moment I held him, I promised him I would be someone who could look up to. He motivated me every day to continue to strive to be better. He was one of the main reasons I decided to go to college and one of the main reasons I continued my educational journey. His unexpected loss jarred my entire existence and made me question my abilities to complete my journey. But from up above, he guided me down the right path and sent me the signs to continue fighting. I initially thought there was no way I could complete this without him. And in some way, I was right. He may not be here with me physically, but his memory and spirit guided me to the finish.

I love you and miss you Isiah. Fly high, fly true.

LTJG Isiah E. Coker (aka Brainiac)

United States Naval Aviator

November 17, 1990 – July 18, 2016

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Finally, to my friends, family, and colleagues, thank you for allowing me to take time away from your lives to focus on making my life better. I will never be able to repay you for your kindness and encouragement. Each of you made this possible in your own special way.

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CHAPTER 1: INTRODUCTION

The purpose of this survey study was to determine if developing noncognitive variables in first-year students has an identifiable impact on their sense of belonging to the campus community. The study was conducted across two first-year seminar courses at a large public university in the southeast, with participants representing multiple student backgrounds and academic majors. The goal of the research is to provide support for combining noncognitive skill development, with already established cognitive skill development practices, as a more influential method for student development.

Background of the Problem

Retention rates of first-year students are important because of the variables which influence student graduation. Some of these variables include academic preparation, academic engagement, and social engagement (Demetriou & Schmitz-Sciborski, 2011). Student retention initiatives are utilized campus-wide and have a deliberate focus on first-year students. Focus on this student group is deliberate at the institutional level to provide a social environment that promotes student graduation (Demetriou & Schmitz-Sciborski, 2011).

To understand the perceptions of first-year students at a large, research-based institution located in the southeast, efforts to improve first-year retention have been put in place by the institution. Examples of these efforts are a new student convocation, freshman orientation, and a first-year seminar course. These programs have been implemented to assist with the cognitive skills of first-year students. In addition, noncognitive skills have been viewed as just as important in determining the educational achievements of students (Holmund & Silva, 2014). However, questions remain on whether incorporating noncognitive skill development within the first-year

experience would improve the retention and sense of belonging of students by improving academic motivation and performance.

Influences on the Problem

To understand the influence of noncognitive variables on first-year students, defining the influences on student academic motivation and sense of belonging are important. The University has implemented programs and support to assist new students as they balance their transition to college and their academic commitments. Another influence, which is the focus of this study, involves noncognitive skill development. These noncognitive skills include regular class attendance, arriving ready to work, paying attention, participating in class, and devoting time outside of school for studying and homework (Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, & Beechum, 2012). Academic variables can be considered extremely important since almost all other noncognitive factors work through academic behaviors to impact performance (Farrington et al., 2012). The study sought to find ways to utilize noncognitive skill development to better improve the sense of belonging of first-year students in the campus community. The amount of influence these factors have on the sense of belonging of first-year students is rooted within their level of engagement with the university and their peers (Demetriou & Schmitz-Sciborski, 2011; Kuh, 2009).

Cognitive Skills

Bowman (2010) defines cognitive skills as, "students' specific skills and abilities in thinking, reasoning, and processing information." Attributes of cognitive skills include critical-thinking and problem-solving skills (Bowman, 2010). At the time of the study, the university was focused on improving cognitive skills through first-year student initiatives already in place. These initiatives fall under their New Student Orientation programming. As stated on the Office

of Student Transitions website (Office of Student Transitions, n.d.), the orientation informs students about resources to help them be successful academically, socially, and emotionally. The orientation session's basic primary function is to assist students with their transition from high school to college. The orientation for new students utilizes discussions about college student life, living in on-campus housing, working with faculty and time management to emphasize the importance of critical-thinking and problem-solving skills. The intent is to assist students with learning how to think about decisions they might make, how to deal with potential peer conflict, and how to engage faculty when assistance is needed.

The other component of the Freshman Experience involves the Study Skills seminars and the COAD 1000 – Student Development and Learning in Higher Education course. The Study Skills seminars are led by student affairs staff members and academic advisors. The focus of these seminars is to assist with goal setting and motivation, time management, career development and life skills. Some of the COAD courses are grouped by a specific topic or by a student demographic. The COAD 1000 courses are common courses available for all first-year students. No matter the topic, the main course objective is to assist first-year students with the development of academic skills, the learning process, and other personal characteristics for academic success. The expected outcomes of the COAD course are grouped within four core competencies: Academic Engagement, Campus Engagement, Personal Development, and Student Learning.

Noncognitive Variables

Noncognitive variables, which are indirectly addressed within the Office of Student Transitions or the COAD course, may include self-motivation, self-advocacy, and self-

confidence. Assumptions have been made that improvement in these skills can improve the overall sense of belonging of first-year students within the university community.

While the Office has implemented efforts to improve cognitive abilities of students, they are in the early stages of reviewing ways to improve noncognitive variables. One area of study involves having first-year students complete the SuccessNavigator, provided by Educational Testing Service (ETS). The test has been identified to measure aspects of noncognitive variables such as commitment, self-management, and social support. They set achievement goals for the student in addition to measuring improved noncognitive skill development.

The first goal is to help students develop a sense of belonging. The purpose of this goal is to apply lessons in familiarity of campuses resources to improve the ability to communicate with the campus community and develop a network of mentors or partners who could be of value. The second goal, to teach academic skills, focuses on tips to improve note-taking and test-taking skills. In addition, it introduces the student to academic policies. The third goal is to assist students with life skills. This goal focuses on time management techniques, stress management, and social decision making such as alcohol or drug usage and personal relationships. The fourth goal is to begin the career development process and may be dependent on the individual COAD section. Sections that are major-specific assists students with understanding program requirements and career options. Other sections that are not major-specific address the career exploration process. The focus of this study will be to measure ways to impact the first goal and developing a sense of belonging.

Theoretical Framework

The development of noncognitive variables and the sense of belonging of first-year students can also be framed within the theory of student engagement (Kuh, 2009). How new

students engage with fellow students outside of the classroom setting is assumed to influence student retention and the transition to college. Kuh (2009) identifies student engagement as a representation of the time and effort devoted to activities by students. Student engagement can be divided into two areas: academic engagement and social engagement (Demetriou & Schmitz-Sciborski, 2011). Academic engagement focuses on the positive faculty-student interactions and utilization of institutional resources for academic support. Demetriou and Schmitz-Sciborski (2011) identified the connection to these resources combined with positive faculty interaction can positively influence retention.

Social engagement can be most visibly identified through campus clubs and organizations. The establishment of friendships with peers, the development of mentors, and connections to faculty have been identified as important factors for student integration resulting in positive community involvement and retention (Demetriou & Schmitz-Sciborski, 2011). Research has shown that the experiences, such as the ones listed, matter most to desired outcomes if students are engaged at a high level in educationally purposeful activities (Kuh, 2009). While the theory of student engagement is more behavioral, a related theory by Astin examines the psychological component of engagement in his Theory of Student Involvement.

Astin (1984) defines student involvement as the amount of physical and psychological energy that the student devotes to the academic experience. He uses this definition to categorize students into two general classifications. The first classification of students, highly involved students, are ones who devote considerable energy to studying, spend time on campus, participate in organizations, and engage with faculty (Astin, 1984). The other classification, uninvolved students, neglect their studies, spend little time on campus, do not participate in extracurricular activities, and do not contact faculty or other students (Astin, 1984). Berger and

Milem (1999) stated that "student involvement leads to greater integration in the social and academic systems of the college and promotes institutional commitment" (p. 644). The Theory of Involvement utilizes involvement from a behavioral concept to emphasize the critical nature of the behavioral aspects of involvement (Astin, 1984). The theory of student involvement implies that to achieve desired effects, activities must elicit sufficient student effort and investment of energy to bring about the desired learning and development (Astin, 1984, p. 522).

According to Astin (1984), “It is not so much what the individual thinks or feels, but what the individual does, how he or she behaves, that defines and identifies involvement” (p. 519). Involvement is relevant to the study based on its emphasis on the active participation of the student in the learning process (Astin, 1984). It encourages educators to focus on how motivated a student might be and how much time and energy the student devotes to learning (Astin, 1984). In some cases, the theory of involvement has been compared to the psychological construct of motivation (Astin, 1984; Astin, 1985). The process of involvement is used because it can be observed and measured more directly than motivation (Astin, 1985). Another component of the theory of involvement, which will play a role in the study, is its view as student time as a resource (Astin, 1984; Astin, 1985). The amount of time and effort a student can devote to activities has a direct influence on their talent development (Astin, 1984; Astin, 1985; Kuh, 2001; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Chickering (as cited by Pike, Kuh, & Gonyea, 2003) also believed that participation in academic and social activities also play an important role in learning. The time invested in and applied to academic and social activities, which can be considered synonymous with effort, is a significant component of student integration (Astin, 1984; Pike et al., 2003).

The theory of involvement makes note that physical time and energy of students are finite and that educators are competing with other aspects of a students' life for that time and energy (Astin, 1984; Astin, 1985). Since Astin (1984), Tinto (1993), and Kuh (2009) have viewed involvement as a behavior concept, involvement could be represented by the Lewin Equation. The Lewin Equation, B = f(P,E), hypothesizes that behavior (B) is a function (f) of the person (P) in their environment (E) (Milem & Berger, 1997; The Ohio State University, 2015; Watt & Moore, 2001). The foundational base of this equation is that perceptions within an environment will lead to specific behaviors (Milem & Berger, 1997). Utilizing the theory of involvement, in combination with the Lewin Equation, will assist with framing the study from the perspective of involvement, engagement, and integration.

Purpose Statement

The purpose of this survey study is to explore the influence of developing noncognitive variables in first-year students to assist in improving a sense of belonging to the campus community. This study utilizes multiple groups of first-year students for measuring noncognitive skill development and any potential growth in sense of belonging within the COAD 1000 course. In addition, a goal is to identify strategies that show a positive effect on academic performance of first-year students by focusing on other noncognitive variables such as academic motivation, peer engagement, or academic perseverance. These strategies were embedded in the COAD course structure as outlined within the syllabus. The participants were first-year students at a public, research-based institution in the southeast.

The goal of the research is to provide support for combining noncognitive skill development, with already established cognitive skill development practices, as a more influential method for student development. In addition, the study seeks to provide additional

support to the Theory of Involvement as a key component of student development in higher education.

Research Questions

This study focused on answering the main research question: How does the development of noncognitive variables influence the sense of belonging experienced by first-year students that participate in a COAD 1000 course? In addition, the following questions hope to be answered through the research:

1. Which noncognitive variables have the most influence on the sense of belonging?
2. How do the competencies of a first-year student seminar course influence noncognitive variables?

The study also seeks to provide additional support to the Theory of Involvement as a key component of student development in higher education.

Study Sample

Participants consisted of first-year students registered for a COAD 1000 First-Year Seminar course. Traditionally, registration for this group is random and left to the student to register by contacting their advisor. The expected demographics of the participants will consist of male and female students. The study was conducted as a survey study and utilized the Noncognitive Questionnaire (NCQ) and the Sense of Belonging Instrument (SOBI) (Hagerty & Patusky, 1995; Tracey & Sedlacek, 1984).

Significance of the Study

The significance of this study is to develop an understanding of how noncognitive variables can influence the development of first-year students and their sense of belonging to the campus community. The scarcity of research on noncognitive variables and student development

will be discussed in Chapter 2. The goal of the research is to provide support for combining noncognitive skill development, with already established cognitive skill development practices, as a more influential method for student development. In addition, the study seeks to provide additional support to the Theory of Involvement as a key component of student development in higher education. The intent is to create a correlation between the amount of physical and psychological energy that new students devote to their academic experience through focusing on their noncognitive skill development.

The findings may establish a foundation for enhancing practices in student development in higher education. Current practices in student development focus primarily on cognitive development skills such as study skills, time management, and test-taking strategies. While some programs may incorporate variations of noncognitive variables, there appears to be a gap in the focus on developing soft skills. The literature struggles to identify noncognitive variables due to the variable definition of these skills. Through the study, a goal is to hopefully establish the noncognitive variables identified by Tracey and Sedlacek (1984) as norms for student development. Establishing norms could provide a programmatic model of a student development course to be presented to institutional leadership.

In addition to supporting the Theory of Involvement and establishing normative noncognitive variables for development, the research seeks to provide further insight into the sense of belonging of first-year students. The study hopes to provide evidence that noncognitive skill development can influence first-year students and motivate them to connect with their peers, faculty members, and the campus community.

Limitations

A limitation of my research is the inability to conduct the study over a larger proportion of the student population. Access to first-year students in a classroom setting is limited to the COAD courses offered only during the Fall semester. Another limitation involves the inability to readily identify participants. Finally, first-year students can select their own schedules, which prevents early tabulations of the demographics of the student participants. Each of these limitations are institutionally driven and will be encountered within future studies.

Summary

As mentioned, the purpose of my research is to understand how developing noncognitive variables in first-year students may influence their sense of belonging to campus. Chapter 1 introduced the problem, provided a theoretical framework, and identified influences on the problem. Chapter 2 is a review of the literature providing a background on first-year seminars, sociological and psychological factors in student development, and introduces background on the three components of the study. Chapter 3 provides the mixed-methods of data collection used in the study. Chapter 4 examines the results of the study across the cases and provides cross-case themes and assertions. Chapter 5 provides a summary of the study, while also addressing potential recommendations for future research.

CHAPTER 2: REVIEW OF LITERATURE

The literature review was done in a manner to provide background on factors that impact the study and its participants. The first phase of the literature review was to provide a brief introduction of the sense of belonging concept and its importance. The first factor of literature reviewed First Year Seminars (FYS) and their connection to student development. Following the background of the sense of belonging, key factors were identified across the literature: defining the sense of belonging, identity and self-categorization, student retention and student engagement. These factors were identified by the researcher due to their potential to either directly, or indirectly, influence the study. The final sections of the literature look specifically at two components of the research question: noncognitive variables and first-year student development.

Literature Review

The foundation of the COAD 1000 course is rooted within the beginnings of first-year student seminar courses. The beginning of the modern First-Year Seminars (FYS) is credited to the former President of the University of South Carolina, Thomas Jones (National Resource Center, n.d.). In an effort to bond students and the institution, President Jones created the University 101 course for first-year college students (National Resource Center, n.d.). While there are courses at many institutions, much is not known about the impact of FYS because much of research is limited to single-institution studies (Porter & Swing, 2006). This research does indicate that FYS have a positive impact on student academic and social integration (Hickingbottom-Brawn & Burns, 2015; Porter & Swing, 2006; Tinto, 1993).

The impact of a FYS is influenced by the forms in which they could take. FYS traditionally take one of two forms: skill-based or topic-based. Skill based courses train students

in a variety of skill associated with academic achievement (Hickingbottom-Brawn & Burns, 2015). The other type of FYS are focused on a particular topic, such as an academic major or student demographic, utilized to pique the academic interests in students (Hickingbottom-Brawn & Burns, 2015). As identified within the National Survey of First-Year Seminar (NRCFYEST, 2013), FYS have three frequent objectives: developing a connection with the institution, providing an orientation to campus resources, and developing academic skills. These objectives are related to the widely agreed upon purposes of FYS, which include increasing retention through bolstering student engagement, academic success, and social integration (Hickingbottom-Brawn & Burns, 2015; Porter & Swing, 2006).

The implied benefits of FYS has been thoroughly researched (Hickingbottom-Brawn & Burns, 2015; NRCFYEST, 2013; Porter & Swing, 2006). Research shows that the combined components of FYS can lead to greater retention, academic success, and social interaction (NRCFYEST, 2013; Porter & Swing, 2006). However, understanding of how the specific aspects and components of FYS courses and their impact persistence is lacking (Porter & Swing, 2006). Understanding the effect of FYS components must be able to consider the influence of student characteristics and institutional characteristics (Porter & Swing, 2006).

Sense of Belonging

The ‘need to belong’ was redefined in 1966 to emphasize its importance in child development, school, social relationships and mental health (Anant, 1967a). Anant’s work was among the earliest attempts to measure belonging (Hagerty & Patusky, 1995). Anant’s (1966) definition of belongingness is a personal involvement (in a social system) to the extent that the person feels himself to be an indispensable and integral part of the system. Early literature focused on belonging from the perspective of a mental health concept (Anant, 1966; Anant,

1967a; Anant, 1967b; Hagerty, Lynch-Sauer, Patusky, Bouwsema, & Collier, 1992; Hagerty & Patusky, 1995; Hoffman, Richmond, Morrow, & Salomone, 2002; Malone, Pillow, & Osman, 2011). Anant (1967b) even hypothesized that there was a positive relationship between sense of belongingness and mental health. Sense of belonging has also been defined as a students' psychological sense of identification and affiliation with the campus community (Hurtado & Carter, 1997).

Hagerty et al. (1992) conducted research on the sense of belonging from the psychological perspective. They proposed that sense of belonging occurs in relation to various external referents (Hagerty et al., 1992). Two examples of external referents identified as potentially influencing the development of the sense of belonging occur within systems or environments. A system can be a relationship or organization, while an environment can be natural or cultural (Hagerty et al., 1992). Hagerty et al. (1992) derived their own definition of sense of belonging as the experience of a person which makes them feel as if they are an integral part of a system or environment. Additionally, they delineated two dimensions of sense of belonging. The first was valued involvement; the experience of feeling valued, needed, accepted (Hagerty et al., 1992; Hagerty & Patusky, 1995; Hoffman et al., 2002). The second dimension, fit, was defined as the person's perception that his or her characteristics articulate with or complement the system or environment (Hagerty et al., 1992; Hagerty & Patusky, 1995; Hoffman et al., 2002).

As the research on the sense of belonging begins to become more relevant in higher education, links between university-level variables and the sense of belonging in students have been explored (Freeman, Anderman, & Jensen, 2007; Hoffman, Richmond, Morrow, & Salomone, 2002). Two variables identified were: quality of faculty-student interactions and the

general sense of social acceptance on campus (Freeman et al., 2007). Research by Baumeister and Leary (as cited by Freeman et al., 2007). suggest that interpersonal interactions with others may have an additive effect and that, when people perceive an environment as caring, their need to belong is fulfilled. Caring within faculty-student interactions refers to the instructor's communicated caring about the students' learning, rather than interpersonal caring (Freeman et al., 2007). In addition, social acceptance on campus plays an important role in a students' adjustment to college life and cognitive development (Astin, 1993; Freeman et al., 2007). This form of acceptance and respectful interaction is conducive to developing a sense of belonging in students (Freeman et al., 2007).

Institutions are beginning to view social acceptance and belongingness by focusing on implementing and improving high-impact practices. As first defined by George Kuh, high-impact practices encompass educational programs that make a difference in students' lives, bring substantial educational benefits, and correlate with better retention and engagement (NSSE, 2007; Tukibayeva & Gonyea, 2014). High-impact practices can include learning community programs which foster a sense of belongingness for students who are new to college and the development of service-learning programs (Tukibayeva & Gonyea, 2014). The National Survey of Student Engagement [NSSE] (2007) recognized six high-impact practices which have been determined to have positive associations with student learning and retention. The six high-impact practices measured by the NSSE (see Table 1) are representative of the characteristics of high-impact activities (Kuh, 2008; National Survey of Student Engagement, 2007; Tukibayeva & Gonyea, 2014). While there are other student success programs, not all meet the characteristics (see Table 2) of high-impact practices (Kuh, 2008; National Survey of Student Engagement, 2007; Tukibayeva & Gonyea, 2014).

Table 1

High-Impact Practices in NSSE

Practice	Description
Service-Learning	Courses that included a community-based project
Learning Community	Formal program where groups of students take two or more classes together
Research with Faculty	Work with a faculty member on a research project
Internship or Field Experience	Internship, co-op, field experience, student teaching, or clinical placement
Study Abroad	Helps students explore cultures, life experiences, and worldviews different from their own
Culminating Senior Experience	Capstone course, senior project or thesis, comprehensive exam, portfolio, etc.

Note. High-Impact Practices, Retrieved from http://nsse.indiana.edu/html/high_impact_practices.cfm

Table 2

Characteristics of High-Impact Practices

High-Impact Practices as defined by NSSE
• Practices typically demand that students devote considerable time and effort to purposeful tasks.
• High-impact activities puts students in circumstances that essentially demand they interact with faculty and peers about substantive matters, typically over extended periods of time.
• Participating in one or more activities increases the likelihood that students will experience diversity through contact with people who are different from themselves.
• Even though structures and settings of high-impact activities differ, students typically get frequent feedback about their performance in everyone.
• Participation in these activities provides opportunities for students to see how what they are learning works in different settings, on and off campus.
• It can be life-changing to study abroad, participate in service learning, conduct research with a faculty member, or complete an internship.

Note. NSSE Annual Report 2007, Retrieved from http://nsse.indiana.edu/NSSE_2007_Annual_Report/index.cfm

Identity and Self-Categorization

How a person interacts with others, with or without similar interests, is rooted in the person's self-image or identity. According to Tajfel (1975), individuals strive to achieve a satisfactory concept or image of themselves within society, known as self-definition. An individual's self-definition is also developed through membership within numerous social groups and the positive or negative impacts these social groups have on the individual (Tajfel, 1975). The development of a self-definition is rooted in four concepts: social categorization, social identity, social comparison, and psychological group distinctiveness (Tajfel, 1975). Social identity is understood to be part of an individual's self-concept which is based on their knowledge of membership within a social group (or groups), and the emotional attachment the membership provides (Abrams & Hogg, 2010; Hogg, 2014; Hogg & Reid, 2006; Hogg & Terry, 2000; Tajfel, 1975; Wyer, 2010).

Social categorization helps structure the casual understanding of the social environment when the social environments are ordered in a manner which makes sense to the individual (Tajfel, 1975). Social categorization lies at the core of the social identity approach (Hogg, 2014; Hogg & Reid, 2006). The social environments represent the cognitive formation of groups for an individual. The basic cognitive process found within social categorization is rooted in the self-categorization theory that causes people to identify with groups (Hogg, 2014; Hogg & Reid, 2006; Hogg & Terry, 2000). Groups as a cognitive entity denote an entity that is meaningful to the individual at a point in time (Hogg & Reid, 2006; Tajfel, 1975). This definition of groups does not consider the face-to-face traditional definition of a group for the purposes of social categorization.

Categorization is a guide for action in the sense that it helps to structure the social environment (or group) according to certain cognitive principles (Tajfel, 1975). Individuals cognitively represent social categories as prototypes or sets of attributes that define one group and distinguish it from others (Hogg, 2014; Hogg & Reid, 2006; Hogg & Terry, 2000). Prototypes tend to be shared—people in one group in the same context share their prototype of the in-group and relevant outgroup(s) (Hogg, 2014; Hogg & Reid, 2006). This leads to people being viewed through the lens of the relevant group prototype and as a representation of how well they embody the prototype (Hogg, 2014; Hogg & Reid, 2006). Another important component of social categorization is value differentials. These category representations, or prototypes, capture similarities among people within the same group and differences between groups. In other words, they accentuate intragroup similarities (assimilation) and intergroup differences (Hogg & Reid, 2006). In addition, individuals sacrifice their personal self-interest for their group so social categorization depersonalizes our perception of people (Abrams & Hogg, 2010; Hogg & Reid, 2006). Depersonalization, by its very definition, involves the perception of similarity between oneself and the ingroup (Wyer, 2010).

Social categorization by individuals is also influenced by the individual's self-categorization within the group. Social categorization of self cognitively assimilates self to the ingroup prototype, leading to the depersonalization of self-conception (Hogg, 2014; Hogg & Terry, 2000). The dynamics of self-categorization has the same effect as categorization of others—it depersonalizes self-perception in terms of the in-group prototype as described above for the categorization of others (Hogg & Reid, 2006). According to Hogg and Read (2006), self-categorization has additional effects; it not only transforms self-conception and generates a feeling of belonging and group identification, but also transforms feelings and behaviors to

conform to the group prototype. Self-categorization causes our thoughts, feelings, perceptions, and behavior to conform to our prototype of the in-group (Hogg & Reid, 2006).

The combination of social categorization and self-categorization indirectly establish a set of ingroup norms and potential biases within groups. Groups and situations have their own behavioral attributes that regulate the behavior of people in the situation or belonging to the group (Hogg & Reid, 2006). This regulatory behavior within the group is considered the norm. Norms are shared patterns of thought, feeling, and behavior (Hogg & Reid, 2006). Group prototypes are group norms, but other members' behavior could be utilized as information to construct a group norm (Hogg & Reid, 2006). Ingroup bias occurs even when the gain was symbolic rather than material (Abrams & Hogg, 2010). Social categorization generates stereotypical expectations and encourages stereotype-consistent interpretation of ambiguous behaviors (Hogg & Reid, 2006).

Social identity is most strongly associated with people's perception and interpretation of the intergroup differences (Abrams & Hogg, 2010). As pointed out by Wyer (2010):

> personal identity is salient, people conceive of themselves as distinct individuals and focus on individual characteristics. In contrast, when a social identity is salient, people conceive of themselves as interchangeable with other members of the social in-group, and their focus shifts to in-group characteristics. (p. 453)

The identity which is more salient is dependent upon the type and structure of the organization, or group. Groups are organized to contain subgroups, while they also exist within larger groups (Hogg & Terry, 2000). Since the social identity of subgroup members is derived from the larger group, inter-subgroup relations within a larger group can make both identities simultaneously salient (Hogg & Terry, 2000).

Student Retention

As stated by Tinto (1993), the first year of college is an important year in the process of persistence. During or after the first year is traditionally when the largest proportion of leaving occurs from an institution (Tinto, 1993). This perspective of departure in higher education is known as student retention and attrition. In understanding student retention, institutions must understand how their own policies and practices can influence the student's decision to leave. Student experiences within the institution lead over time to different forms of withdrawal (Tinto, 1993). Tinto (1993) developed a theory of student departure with the goal of explaining how and why individuals and institutions both play a role in why a student leaves college. As part of his theory, Tinto (1993) identifies two types of student departures. The first is institutional departures, meaning those who choose to leave a specific institution. The second is system departures which are those who withdraw from all forms of formal higher educational participation (Tinto, 1993).

Previous research regarding the institutional departure phenomenon does not fully reveal the processes of departure that led to the categorization of student types (Tinto, 1993). Individual student departure could be linked to two attributes identified as primary roots of departure known as intention and commitment (Tinto, 1993). The intention attribute can be linked to the level of one’s educational or occupational goals (Tinto, 1993). These goals can determine the likelihood of college completion within individuals. However, individual intentions may not always be focused on the student’s degree or occupational goals. Understanding the specificity, stability, and clarity of individual intentions must be determined when studying institutional departure (Tinto, 1993). It is difficult to gauge the exact level of intent of students regarding educational

investment (Tinto, 1993). According to Tinto (1993), entering students are uncertain of their long-term educational or occupational goals.

Individual commitments also proved to be essentially related to departure from institutions of higher education (Tinto, 1993). An individual student's lack of commitment or willingness to complete the degree can also play a part in the college departure process. As identified by Tinto (1993), it should be understood that there will always be students who simply are unable to or unwilling to commit themselves to the college completion process. This can lead to academic dismissal or voluntary withdrawal but may not be indicative of a student's lack of ability (Tinto, 1993). Pace's "Quality of Student Effort" scale (as cited by Tinto, 1993, p. 42) could be used as a source of measurement of the extent to which students engage in higher activities.

Student Engagement

Persistence in education can be positively linked to the amount of time and energy a student puts forth (Kuh, 2009). This variable was studied by Astin (1999) as part of his student development theory. The basis of the theory revolves around the definition of involvement. Student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience (Astin, 1999; Kuh, 2009). Student involvement implies a behavioral component focusing primarily on what an individual does, or how he or she behaves, that defines and identifies involvement (Astin, 1999). Kuh (2009) would later include what institutions do to induce students to participate in his definition of student engagement.

This behavioral component carries over into higher education as the theory emphasizes active participation of the student in the learning process (Astin, 1999). Ethington and Horn (2007), identified a relationship between previous research regarding student involvement. They

ascertained that the extent to which students exert their time and efforts in educational opportunities and activities, provided by the institution, directly impacts growth and development (Ethington & Horn, 2007). They also make the distinction that it is the quality of the engagement, not just the participation that impacts growth (Ethington & Horn, 2007). During their review of the research, Ethington and Horn (2007) identified the work of Dr. C. Robert Pace and his College Student Experiences Questionnaire (CSEQ). Through studying his work, they could identify what could be considered the beginning levels of the types of engagement.

The most direct level identified was that the college experience encompasses the events in which students engage while in college to include events inside and outside of the classroom (Ethington & Horn, 2007). This level involves more cognitive based student engagement. Another level takes into consideration these experiences and how they are impacted by the characteristics of the environment and the quality of effort by the student (Ethington & Horn, 2007). This level could be considered the emotional component of student engagement. The final level of Pace's CSEQ indicates that it is the combination of environment and student effort that contributes to student development (Ethington & Horn, 2007). This level appears to be influenced by student behavior.

The phrase "student engagement" has come to refer to how involved or interested students appear to be in their learning and how connected they are to their classes, their institutions and each other (Axelson & Flick, 2010; Kuh, 2009). Engagement has been categorized into behavioral, emotional, and cognitive engagement within higher education (Axelson & Flick, 2010). These levels of engagement have led researchers to struggle with identifying which, if any, of the three engagement categories is predominant (Axelson & Flick, 2010). Further research must be conducted to understand the interrelationship between the

various types of engagement (Axelson & Flick, 2010). According to Axelson and Flick (2010), “we need to know more about why some students, and some subgroups of students, disengage under certain circumstances and what to do to prevent that from happening” (p. 43).

Noncognitive Variables

Sedlacek (2004) uses noncognitive to "refer to variables relating to adjustment, motivation, and perceptions, rather than traditional verbal and quantitative (often called cognitive) areas typically measured by standardized tests" (p. 36). Noncognitive variables have also been referred to as effective outcomes or "soft skills" (Astin, 1993; Gayles & Hu, 2009; Heckman & Kautz, 2012). Early research by Sedlacek and Brooks (as cited by Tracey & Sedlacek, 1984) identified several noncognitive variables related to academic success:

> (1) positive self-concept, (2) realistic self-appraisal, (3) understanding of and an ability to deal with racism, (4) preference for long-term goals over more immediate, short-term needs, (5) availability of a strong support person, (6) successful leadership experience, and (7) demonstrated community service. (p. 4)

These factors were deemed to be valuable in the assessment of nontraditional students due to their connectivity to academic persistence, motivation, and grades (Gaston-Gayles, 2004; Sedlacek, 2004; Sedlacek & Adams-Gaston, 1992). When including research by Brown and Marenco in 1980 (as cited by Sedlacek, 2004, p. 36) an eighth noncognitive variable can be included: Knowledge acquired in a field. Sedlacek (2004) provided descriptions of the eight noncognitive variables (see Table 3) that are valuable in assessing diverse populations.

Table 3

Description of Noncognitive Variables

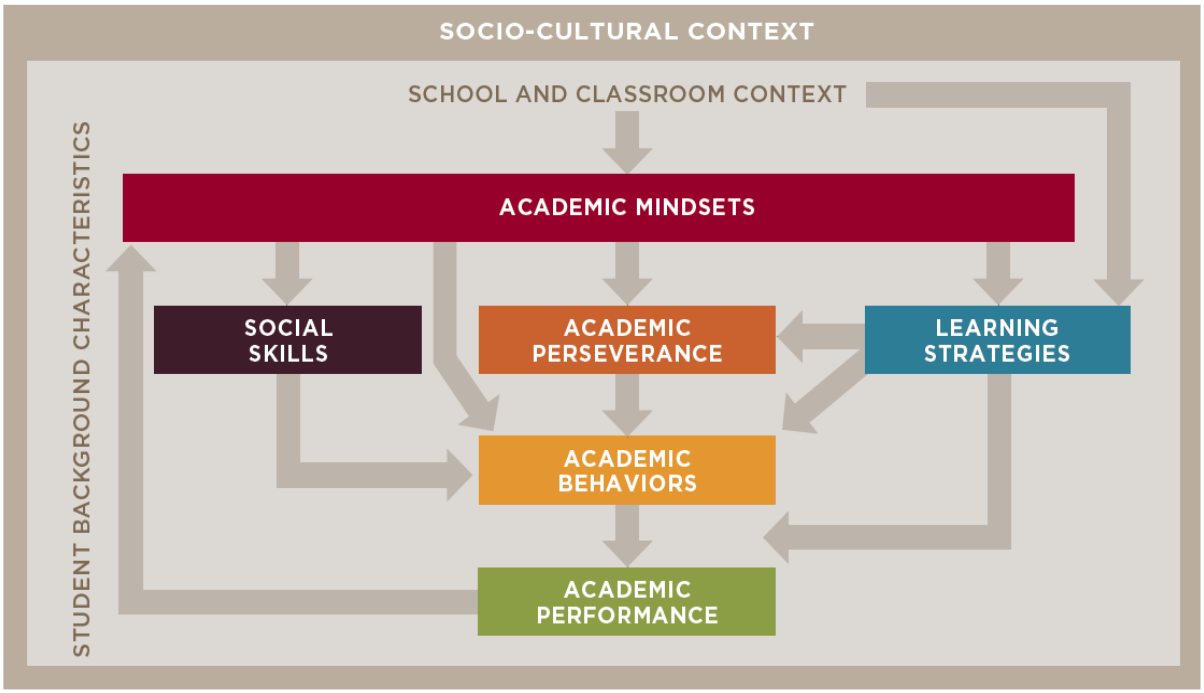
Variable Number	Variable Name	Description
1	Positive self-concept	Demonstrates confidence, strength of character, determination, and independence
2	Realistic self-appraisal	Recognizes and accepts any strengths and deficiencies, especially academic, and works hard at self-development; recognizes need to broaden his or her individuality
3	Successfully handling the system (racism)	Exhibits a realistic view of the system on the basis of personal experience of racism; committed to improving the existing system; takes an assertive approach to dealing with existing wrongs, but is not hostile to society and is not a "cop-out"; able to handle racist system
4	Preference for long-term goals	Abel to respond to deferred gratification; plan ahead and sets goals
5	Availability of strong support person	Seeks and takes advantage of a strong support network or has someone to turn to in a crisis or for encouragement
6	Leadership experience	Demonstrates strong leadership in any area of his or her background (church, sports, noneducational groups, gang leader, and so on)
7	Community involvement	Participates and is involved in his or her community
8	Knowledge acquired in a field	Acquires knowledge in a sustained or culturally related way in any field

Note. Noncognitive variable descriptions by Brown and Marenco (as cited by Sedlacek, 2004).

Astin (1993) viewed noncognitive variables from the behavioral scientist viewpoint that human performance had two domains: cognitive (or intellective) and noncognitive (or effective). Astin's effective outcomes refer to a student's values, attitudes, and beliefs (Astin, 1993; Gayles & Hu, 2009). One important affective outcome for students is having a positive self-concept (Astin, 1993; Gayles & Hu, 2009). Having a positive feeling of oneself assists with growth and development in areas such as academic performance and developing competence (Gayles & Hu, 2009).

A study of noncognitive factors, which are defined as sets of behaviors, skills, attitudes, and strategies that are crucial to students' academic performance and persistence, identified five categories of noncognitive factors (Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, & Beechum, 2012; Nagaoka, Farrington, Roderick, Allensworth, Keyes, Johnson, & Beechum, 2013). The five categories are (1) academic behaviors, (2) academic perseverance, (3) academic mindsets, (4) learning strategies, and (5) social skills (Farrington et al., 2012). Each of these factors was deemed to have a relationship to student academic performance (see Figure 1) within a school and classroom context (Farrington et al., 2012). This context takes into consideration the variety of variables affecting student motivation and opportunity to learn (Farrington et al., 2012). The relationship between these behaviors is based on the anticipation that noncognitive factors are mutually reinforcing and the relationships are often reciprocal (Farrington et al., 2012).

Farrington et al. (2012) state that academic behaviors are those behaviors commonly associated with being a good student. These behaviors include regular class attendance, arriving ready to work, paying attention, participating in class, and devoting time outside of school for studying and homework (Farrington et al., 2012). According to Farrington et al. (2012),



Note. Research conducted by the University of Chicago Consortium on Chicago School Research, Retrieved from: https://consortium.uchicago.edu/publications?page=3

Figure 1. Model of how five noncognitive factors affect academic performance.

"Academic behaviors are the visible, outward signs that a student is engaged and putting forth an effort to learn" (p. 8). Academic variables can be considered extremely important since almost all other noncognitive factors work through academic behaviors to impact performance (Farrington et al., 2012).

Academic perseverance refers to the tendency to complete school assignments in a timely manner, and to the best of one's ability despite distractions or obstacles (Farrington et al., 2012). This behavior requires students to stay focused on a goal despite obstacles and to prioritize higher pursuits over lower pleasures (Farrington et al., 2012). Characteristics of this behavior include self-discipline and self-control. Academic perseverance can also be viewed as the difference between doing the minimal amount of work to pass a class and putting in long hours to try and master course material (Farrington et al., 2012).

The third category of noncognitive factors is academic mindset. Academic mindsets are the psycho-social attitudes or beliefs one has about oneself in relation to academic work (Farrington et al., 2012). As shown in Figure 1, academic mindsets are the beginning of the reciprocal relationship among perseverance, behaviors, and performance (Farrington et al., 2012). Strong academic performance validates positive mindsets, increases perseverance, and reinforces strong academic behaviors (Farrington et al., 2012). Farrington et al. (2012) identified four academic mindsets through their research. The first academic mindset involves that one belongs to the academic community. It involves a sense that one has a rightful place in a given academic setting and can claim full membership in a classroom community (Farrington et al., 2012). The researchers claim evidence shows that having a sense of belonging in a school or classroom improves a student's academic performance (Farrington et al., 2012). The second mindset involves academic ability being improved by one's efforts, rather than being fixed at a

given level and outside of one's control (Farrington et al., 2012). A student's belief about their intelligence and abilities may be more strongly associated with school performance than measured ability (Farrington et al., 2012). A third mindset identified by the researchers involves student beliefs in their abilities to succeed at a given task (Farrington et al., 2012). The fourth identified mindset involves a student's sense of the subject matter he or she is studying and whether it holds value, or it is interesting (Farrington et al., 2012). This mindset may utilize varying definitions of value.

The fourth categorization of noncognitive factors is learning strategies. Learning strategies are process and tactics one employs to aid in the cognitive work of thinking, remembering, or learning (Farrington et al., 2012). Learning strategies can be utilized to leverage academic behaviors to maximize learning (Farrington et al., 2012). The strategies incorporated within this factor helps the student by connecting academic perseverance, behaviors, and performance (Farrington et al., 2012). The fifth group of noncognitive factors is social skills, which includes interpersonal qualities such as cooperation, assertion, responsibility, and empathy (Farrington et al., 2012). These are also acceptable behaviors that improve social interactions between peers or between students and teachers (Farrington et al., 2012).

First-Year Student Development

The ability to adjust to college life and maintain enrollment is affected by several non-academic issues, such as finances, loneliness, health, interpersonal struggles, autonomy and change (Astin, 1993). These are important factors that could impact the development and retention of first-year students (Astin, 1993; Demetriou & Schmitz-Sciborski, 2011; Tinto, 1993). One of the most important factors in student learning and personal development is student engagement in educationally purposeful activities that

contribute directly to desired outcomes (Gayles & Hu, 2009). Universities can create inclusive learning environments and actively engaged learners by encouraging identity formation (Araujo, Carlin, Clarke, Morieson, Lukas, & Wilson, 2014). Educationally purposeful activities should follow seven principles (see Table 4) which should lead to learning and personal development (Chickering & Gamson, 1987; Gayles & Hu, 2009; Rettig & Hu, 2006). Two widely researched areas of first-year student development based on cognitive development include self-efficacy and learning communities. Academic self-efficacy, which has evolved into college self-efficacy, can be considered a student's confidence in his or her abilities to be successful with academic tasks (Chembers, Hu, & Garcia, 2001; Gore 2006). College self-efficacy has been identified as a significant cognitive variable related to student persistence and academic success (Gore, 2006; Wright, Jenkins-Guarnieri, & Murdock, 2012). However, research regarding the role of college self-efficacy on first-year success is still emerging (Wright et al., 2012). The majority of studies on self-efficacy, persistence, and academic success have largely focused on specific academic areas (Wright et al., 2012).

As identified by Rocconi (2011), learning communities have been researched to show a beneficial link to educational outcomes, including transitioning to college. Students in learning communities are assumed to have better opportunities to make meaningful college experiences due to the structured nature of course clustering and regular discussions (Rocconi, 2011). As identified by Kuh, learning communities are recognized as high impact educational practices that are positively related to students' learning and success in college (Rocconi, 2011). Research into learning communities also connect to educational outcomes indirectly through student engagement (Rocconi, 2011). The connection to engagement and learning communities is based on the premise that learning in college is related to the way students spend their time and energy

Table 4

Seven Principles for Good Practice in Education

Principle	Examples
1. Encourages contacts between students and faculty.	Freshman Seminars on important topics taught by senior faculty members
2. Develops reciprocity and cooperation among students.	Learning groups of five to seven other students, who meet regularly throughout the term
3. Uses active learning techniques.	Internships, independent study, and cooperative job programs
4. Gives prompt feedback.	Assessment of students to guide in planning studies; feedback from course instructors
5. Emphasizes time on task.	Mastery learning, contract learning, and computer-assisted instruction require that students spend adequate amounts of time on learning
6. Communicates high expectations.	Communicated high expectations for underprepared high school students by bringing them to the university for workshops in academic subjects, study skills, test taking, and time management
7. Respects diverse talents and ways of learning.	Personalized systems of instruction and mastery learning let students work at their own pace

(Rocconi, 2011). The quality of engagement by students in the activities and opportunities provided by institutions is what is what truly impacts students' learning and development (Rocconi, 2011).

Summary

First-year student development at many institutions can be focused within First Year Seminar (FYS) courses. These courses can have multiple setups, from topic specific to skill-based. Research has shown that FYS courses have some common themes or objects. Some of these themes include a sense of belonging, self-identification, and self-efficacy. FYS courses can also include high-impact practices, which includes learning communities. However, the impact of FYS is closely related to the level of engagement of students. This leads many of the FYS courses to have a cognitive-based focus and is leading more institutions to create more learning communities as an alternative. Very little, if any, of the first-year student development research mentions other skills other than cognitive-based. Further research needs to be conducted to define noncognitive variables and their direct influence on the sense of belonging and development of first-year students.

CHAPTER 3: RESEARCH METHOD

Purpose of the Study

The purpose of this survey study was to determine if developing noncognitive variables in first-year students has an identifiable impact on their sense of belonging to the campus community. The study was conducted across two first-year seminar courses at a large public university in the southeast, with participants representing multiple student backgrounds and academic majors. The goal of the research is to provide support for combining noncognitive skill development, with already established cognitive skill development practices, as a more influential method for student development.

Overview of Research Design

The study will utilize multiple survey instruments to analyze the sense of belonging of first-year students through noncognitive development. The study will take place within four COAD 1000 First-Year Seminar Courses. All four groups will be asked to complete two surveys. The surveys will be administered at the end of the first semester in order to gauge the impact of noncognitive variables on development through the first semester. An observation of participants will take place with available participants after the surveys are completed.

Participants

Participants consisted of first-year students registered for a COAD 1000 First-Year Seminar course. Traditionally, registration for this group is random and left to the student to register by contacting their advisor. The expected demographics of the participants will consist of male and female students and will be present in one of four groups. The first three groups would contain as few as 10 or as many as 30 traditional first-year students These groups will be labeled as FY1, FY2, AND FY3 for the purposes of the study. Participants

within the groups are randomly registered by the institution. Group four is similar in the types of students within the COAD 1000 course. However, this group consists of self-identified first-generation students based on their responses regarding their parent education levels on their admission application. The participants within this group were identified through Office of Admissions data provided to the instructor prior to the start of the school year. This group forms the Anchors Living-Learning Community for first generation students and will identified as LLC. Students in this group are identified two weeks prior to the fall semester. The LLC provides these students with more intentional and structured academic support. The sampling type will be a criterion sampling across the four groups. This sampling strategy allows for consistent selection of participants within a given population. Since each student is a participant within the COAD 1000 course and is experienced the same basic phenomenon, criterion sampling is an effective approach (Creswell, 2013).

The setting will be within each of the COAD 1000 classrooms at a large, research-based institution in the southeast. Participants in the FY1, FY2, and FY3 groups will be surveyed using the same activity method of an observation activity and interviews. The number and type of methods may be modified as time progresses due to the number of participants and their availability. The LLC group will only be surveyed and will not be interviewed, nor will they partake in any observation activities. All data collection will take place at the end of the semester.

Data collected will take place through administering of the Noncognitive Questionnaire (NCQ) and the Sense of Belonging Instrument (SOBI). Observation will primarily occur for FY1, FY2, and FY3 through one of the observation activities identified for the study. The researcher will occupy the participant as observer role during the observation activities to obtain

insider views and subjective data (Creswell, 2013). During the interview activities, the researcher would be a complete participant to build a rapport with the participants (Creswell, 2013). If possible, interviews of participants will take place with members the study groups. All groups (FY1, FY2, FY3, and LLC) will be provided two surveys to be completed as end-of-semester evaluations.

Measurement Rationale

Many noncognitive variables have been studied for decades, yet exact models and consistent cross-cultural measurements are lacking (Zhou, 2017). Only a few noncognitive variables have been researched extensively at the international level (Zhou, 2017). Noncognitive skill assessments are typically focused on a handful of interrelated skills or one specific skill (Galla, Plummer, White, Meketon, D'Mello, & Duckworth, 2014; Zhou, 2017). Some commonly assessed noncognitive variables are grit, self-control, and social skills (Duckworth & Yeager, 2015; Galla et al., 2014; Zhou, 2017). Zhou's research (2017) identified grit, self-control, and social skills due to the ability to observe them in any culture, they can be learned through education and training, and they have been positively associated with life outcomes. Zhou (2017) points out that noncognitive variables are a challenge to measure since they are greatly influenced by culture. Another limitation of measuring noncognitive variables is using self-reported questionnaires. Self-reported questionnaires allow for the existence of socially desirable bias and faking (Credé & Kuncel, 2008; Duckworth & Yeager, 2015; Galla et al., 2014; Zhou, 2017). Limitations in questionnaire measures led Galla et al. (2014) to develop a behavior measure – the Academic Diligence Task (ADT). Galla et al. (2014) incorporated the concept of grit into their assessment tool as part of academic diligence. The recommendation for measuring noncognitive variables is to capture performance in tasks or behaviors (Galla et al., 2014; Zhou,

2017). According to Galla et al. (2014), behavioral measures of academic diligence may be better suited than academic questionnaires for certain purposes, including assessing the effects of interventions. Behavioral measurement may be more effective since behavioral tasks do not rely upon subjective judgments (Duckworth & Yeager, 2015; Galla et al., 2014; Zhou, 2017). Unfortunately, a framework for universal measurement of noncognitive variables has not been designed (Zhou, 2017). Evidence as to which noncognitive variables, to what extent, and in what situation are most predictive of academic performance is still lacking (Galla et al., 2014; Zhou, 2017).

To measure noncognitive variables, the Noncognitive Questionnaire (NCQ) will be used as the primary survey instrument. The NCQ measures eight variables, which are positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person, successful leadership experience, and demonstrated community service (Tracey & Sedlacek, 1984). The NCQ has been shown to predict success in freshman grades, retention, and graduation (Sedlacek & Adams-Gaston, 1992). The NCQ also has provided validity in evaluating nontraditional students for academic success (Sedlacek & Adams-Gaston, 1992).

Sense of belonging can be rooted within the foundational relationships made between first-year students and faculty and staff or their peers (Freeman et al., 2007; Ribera, Miller, & Dumford, 2017). Ribera et al. (2017) identify these relationships as the foundation for sense of belonging and support for students. Relationships with faculty on a students' sense of belonging is contingent upon the perception of the amount of pedagogical caring from professors (Freemen et al., 2007). Social interactions with peers has been identified as an important factor in college student adjustment (Astin, 1993; Freemen et al., 2007). To measure for sense of belonging, the

Sense of Belonging Instrument (SOBI) will be utilized. The SOBI was selected due it being one of the only instruments available to measure belonging. Its ability to measure the attributes of valued involvement and fit, are two critical psychological components of the sense of belonging (Hagerty & Patusky, 1995).

The SOBI was selected as a measurement tool due to it utilizing two constructs to measure variables related to belonging.. The first two variables are Fit and Valued Involvement and are found within the Psychological construct (Hagerty & Patusky, 1995). The second construct measures the antecedents, which are variables that contribute to a person's sense of belonging. The three variables are Energy for Involvement, Potential and Desire for Meaningful Involvement, and Potential for Shared or Complimentary Characteristics (Hagerty & Patusky, 1995).

Data Collection Tools

Data collected will take place through survey instruments, observation, and an interview dependent upon the group. Observation will primarily occur during the FY1, FY2, and FY3 activity identified for the study. For this group, the activity will be the observation of the Social Injustice and Civility in class discussions. This observation would allow the researcher to gain insight into most of the noncognitive variables during the conversations with the participants. The researcher would be a complete participant to build a rapport with the participants and in the participant as observer role for the FY1 group. The researcher will occupy the participant as observer role during the observation activities to obtain insider views and subjective data with FY2, FY3, and LLC groups.

Limitations with these types of data collection include failure to engage in group activities by students, leading to ineffective observations, or failure of the researcher to establish

a rapport with the participants. A challenge with observation will be based on the researcher's role. The researcher will be the instructor of record for the NSA COAD 1000 course, which could provide challenges regarding the researcher's role as a participant or non-participant in the observation activities.

Survey Instruments

One survey instrument will be the Noncognitive Questionnaire (NCQ). Created by Sedlacek (Tracey & Sedlacek, 1984), the NCQ was designed to assess the eight noncognitive dimensions, which are positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person, successful leadership experience, and demonstrated community service. The basic Noncognitive Questionnaire is a 29-item instrument. It asks the respondent for basic background data within the first ten items. The NCQ asks three open-ended questions which will need to be coded prior to scoring. The remaining items of the instrument ask respondents to answer using a 5-point Likert scale, measuring from 1-Strongly Agree to 5-Strongly disagree. The resulting responses provide a Variable Score for each of the eight measured items.

The other survey instrument will be the Sense of Belonging Instrument (SOBI). Created by Hagerty and Patusky (1995), the SOBI consists of two components to measure sense of belonging: psychological and antecedents. The SOBI-P (psychological) measures the level of perceived sense of belonging; and the SOBI-A (antecedents) measures the intensity of the antecedents of sense of belonging. Antecedents are determined to be the energy for involvement, potential and desire for meaningful involvement, and potential for shared or complementary characteristics, which are the precursors to sense of belonging (Hagerty, 2015). The SOBI-P

consists of 18 questions and the SOBI-A consists of 14. The questions for each instrument are scored on a 4-point Likert scale, measuring 1- Strongly Agree to 4-Strongly Disagree. The SOBI-P portion of the instrument creates a composite score to measure fit and value involvement. The SOBI-A is measured based on the composite of the questionnaire items.

These survey instruments were selected by the researcher based on the close relationship the relationships have with one another. The researcher determined the more positive and encouraging tone of the NCQ would balance and pair well with the perceived negative tone of the SOBI.

Interview Instrument

The second version of the NCQ to be utilized is a variation of the interview and short-answer, variable assessment process. The researcher will utilize a series of questions, from the list of defined noncognitive variables (see Appendix B) provided by Sedlacek (2004). The questions will allow the researcher to measure individual noncognitive variables based on participant responses. Specific themes may arise when interviewing multiple participants which could assist with interpreting the influence of these variables. The selected questions will then be scored using Sedlacek's (2004) Noncognitive Variable Scoring System. The interview will consist of 16 questions, making up two from each of the eight measured variables.

Strategies

The FY1, FY2, and FY3 groups will also be measured based on observations during specified activities. For the purposes of the study, observation activities will be defined as group activities focused on the COAD 1000 Core Competencies that provides an opportunity to measure a noncognitive variable through observation. The COAD 1000 Core Competencies are Campus Engagement, Academic Engagement, Student Learning, and Personal Development.

Each Core Competency has been assigned to a specific noncognitive variable (see Table 5) for measurement. Intervention instruments must take into consideration the availability of the participants within the three groups.

Anticipated intervention activities for the core competencies will be:

- *Academic Engagement* – The abilities and skills to be measured within this competency will be Goal Setting and Connection to Faculty. Participants will be asked to identify their expected long-term academic or career goals. Once these goals are identified, they will be asked to identify a faculty member with knowledge in the participants academic or career field. Measurement of the affiliated noncognitive skills listed in Table 5 will be conducted through interviews with selected participants. The interview structure will be open-ended, leading to additional questions based on the participant's responses.
- *Campus Engagement* – This competency is used to develop the feeling of being part of the campus community, peer to peer connections, and the student overall sense of belonging on campus. Participants will be asked to complete the Sense of Belonging Instrument (SOBI). The SOBI is a 32-item, self-report instrument consisting of two separately scored scales – SOBI-P (psychological state) and SOBI-A (antecedents) (Hagerty & Patusky, 1995).
- *Personal Development* – This competency assists students with the transition to college and development of personality traits such as identity exploration, appreciation for differences, civility, and social justice. The method of measurement for this competency will be through observation. The role of the observer will be as a partial observer to assist with facilitating the participant-led engagement. A series of

Table 5

Pairing of Core Competencies to Noncognitive Variables

COAD 1000 Core Competency	Noncognitive Questionnaire Variables
Academic Engagement	PREFERS LONG-RANGE GOALS TO SHORT-TERM OR IMMEDIATE NEEDS. Able to respond to deferred gratification.
Academic Engagement	KNOWLEDGE ACQUIRED IN A FIELD. Unusual and/or culturally related ways of obtaining information and demonstrating knowledge. Field itself may be non-traditional.
Campus Engagement	AVAILABILITY OF STRONG SUPPORT PERSON to whom to turn in crises.
Campus Engagement	DEMONSTRATED COMMUNITY SERVICE. Has involvement in his/her cultural community.
Personal Development	POSITIVE SELF-CONCEPT OR CONFIDENCE. Strong self-feeling, strength of character. Determination, independence.
Personal Development	UNDERSTAND AND DEALS WITH RACISM. Realist based upon personal experience of racism. Is committed to fighting to improve existing system. Not submissive to existing wrongs, nor hostile to society, nor a "cop-out." Able to handle racist system. Asserts school or organization role to fight racism.
Personal Development	SUCCESSFUL LEADERSHIP EXPERIENCE in any area pertinent to his/her background (gang leader, church, sports, noneducational groups, etc.)
Student Learning	REALISTIC SELF-APPRAISAL, especially academic. Recognizes and accepts any deficiencies and works hard at self-development. Recognizes need to broaden his/her individuality.

Note. COAD 1000 Core Competencies were provided by the Office of First-year Transitions.

scenarios or topics identified by participants, based upon positive self-concepts, social inequality, and leadership, will be used to foster discussion. Participants will be provided a partial explanation of the purpose of the evaluation. Observation will occur over the course of one class period, which equals 50-minutes.

- *Student Learning* – This competency focuses primarily on develop life skills. Some skills include time management, stress management, relationships, and campus safety. Each of these skills requires self-assessment by the participants. Data collected on student learning will be done through interviews with available participants. Topic prompts will be provided to the participants to address the competency skills and the noncognitive variable of self-appraisal. An alternative measure of student learning may be through the *SuccessNavigator* by ETS. This survey instrument is available for purchase at a cost of $6 per participant. If funding cannot be obtained, this measurement will not be included for the purposes of the study.

Data Analysis

The purpose of this study is to determine if noncognitive variable development can influence the sense of belonging in first-year students by answering the following research questions:

1. How does the development of noncognitive variables influence the sense of belonging experienced by first-year students that participate in a COAD 1000 course?
2. Of the noncognitive variables of positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person,

successful leadership experience, and demonstrated community service, which ones have the most influence on the sense of belonging?

3. How do the competencies of a first-year student seminar course influence noncognitive variables?

Data will be collected using mixed methods of data collection. The study utilizes survey instruments, interviews, and observation. These methods will be used to analyze how first-year students feel like they are a part of campus over the course of their first semester.

The NCQ will be provided as an end-of-semester measure of potential changes in levels of noncognitive variables within first-year students. The NCQ will be influenced by the teaching methods of the individual instructors and the deployment of the course content throughout the duration of the COAD 1000 course. Scores of the NCQ will be compared as within the individual participant groups, as well as across the group cohorts. These comparisons across the groups will provide an understanding on developing noncognitive variables.

In addition to the NCQ, participants will be asked to complete the SOBI. The SOBI will specifically be provided as an additional end-of-semester survey. It will be used to measure the students sense of belonging at the end of their first semester based on their experiences within the COAD course. Composite scores of the SOBI-P and the SOBI-A will be used to interpret the overall sense of belonging within the individual groups and as combined cross-group analysis.

The remaining data will be collected through a combination of interviews and observations. The interviews will take place after the survey instruments are completed and will utilize an interview version of the NCQ. The observation activity will take place in a group setting to facilitate intergroup dialogue about what students have learned. Interviews of participants will occur before the semester ends or before the next semester begins. Groups will

be asked about projects or tasks related to noncognitive skill development or related to the sense of belonging attributes. Upon completion of the interviews and the observations, the field notes will be coded for analysis to identify connections across the groups.

Summary

This chapter described the methods used to conduct the study. It identified the participants groups and the settings of where the research will be conducted. The methods of data collection and how the data will be analyzed. The research will be conducted using a mixed-methods study design. The results of the study will be presented in Chapter 4, with the discussion of the data occurring in Chapter 5.

CHAPTER 4: RESULTS

This survey study was to determine if developing noncognitive variables in first-year students has an identifiable impact on their sense of belonging to the campus community. The study was conducted across two first-year seminar courses at a large public university in the southeast, with participants representing multiple student backgrounds and academic majors. The goal of the research is to provide support for combining noncognitive skill development, with already established cognitive skill development practices, as a more influential method for student development.

Research Questions

The purpose of this study is to determine if noncognitive skill development can influence the sense of belonging in first-year students by answering the following research questions:

1. How does the development of noncognitive variables influence the sense of belonging experienced by first-year students that participate in a COAD 1000 course?
2. Of the noncognitive variables of positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person, successful leadership experience, and demonstrated community service, which ones have the most influence on the sense of belonging?
3. How do the competencies of a first-year student seminar course influence noncognitive variables?

This chapter will discuss how the data was collected, identify the demographic of the participants, and break down the components of survey instruments – the Noncognitive Questionnaire (NCQ) and the Sense of Belonging Instrument (SOBI). In addition, a cross-survey

analysis was conducted to compare the NCQ variables to the SOBI scores. As discussed in Chapter 3, data collection was to occur through survey instruments, observation, and potential interviews. However, delays in the study approval process resulted in the elimination of the observations and the potential interviews.

Data Collection

As part of the original study, data collection was to occur through survey instruments, observation, and potential interviews. The original study changed due to the study approval processes. In October 2018, the Institutional Review Board (IRB) process was submitted by the researcher. The submission was submitted as an Exempt per the dissertation at the time. Unfortunately, upon initial IRB review, the study was returned and requested to be updated to an Expedited review. This change required further modifications to the study proposal and the IRB request and resulted in further delays in the study approval. IRB approval was finally given in November 2018 and resulted in an adjustment of the planned study. The researcher still had a limited amount of time to collect data from the COAD 1000 course that is only offered in the Fall semester each year. To complete the study before the Fall 2018 semester ended, the observation and interview components were cut. The late IRB approval prevented the researcher from attending observation events or scheduling participant interviews. To replace the observations and interviews, the researcher course competencies and course materials to address the added research question.

The researcher solicited volunteers from four COAD 1000 courses, one of which was led by the researcher. Each COAD 1000 course contained between 15 to 20 students. Two of the four COAD 1000 courses were able to obtain informed consent, leading to total of 30 participants. The data collection process occurred at the end of the Fall 2018 semester.

Participant consent for the first group, FY1, was requested by the instructor for that class section. The informed consent form was provided to the instructor and was reviewed with the researcher. The instructor read the informed consent form to the students and requested participation. Participation consent was collected from seventeen students from the FY1 group. Once the consent forms were collected, students were provided both surveys – the NCQ and the SOBI.

Consent for the researcher-led course, FY2, was conducted by another faculty member to eliminate the potential conflict of interest of researcher-as-instructor. The faculty member reviewed the consent form with the students and emphasized the voluntary nature of participation. They also reinforced that participation would have no impact on their grade for the course. Fourteen students completed the informed consent form during this meeting. Unlike the FY1 group, the two surveys were provided the following week at the beginning of a scheduled class meeting. One student who completed the consent form was not present to complete the survey. Therefore, data was collected from thirteen consented participants.

The instructor for the FY3 group was provided the informed consent form and not the surveys. Communication with this instructor was via email only. The instructor was asked to request consent from members within their course. No response was received from the instructor after a week. When finally contacted, the instructor informed that none of the students in the course had agreed to participate in the study. A reason for the lack of agreement was not provided and the instructor did not respond to additional requests.

The instructor for the LLC group was also provided the informed consent form and not the surveys. As with the FY3 group, communication with this instructor was via email only. When the instructor agreed to request consent from their students, they were still meeting in a traditional class setting. However, after providing the consent form to the instructor, the

researcher was informed that the LLC group was moving from the traditional class setting to individualized, randomly scheduled meetings. These meetings were based on the availability of the students and prevented collection of consent from being collected in a timely manner. This resulted in the LLC group not becoming a part of this study.

The consent and survey collection process resulted in two participant groups – FY1 and FY2. These groups consisted of thirty total participants, all of whom completed both survey instruments. Due to the challenges in securing participants, and timing, the planned interview and intervention activities were not included in the study. The survey instruments and signed consent forms were collected and maintained in sealed envelopes prior to the data analysis process.

Data Analysis: Research Question One

Research question one was: How does the development of noncognitive variables influence the sense of belonging experienced by first-year students? To answer this question, both the NCQ and the SOBI survey instruments were recreated within Qualtrics. Qualtrics is a browser-based survey software licensed by the institution where the study is being conducted. This software provided a secure location to upload survey data. It also provided the ability to assign scoring to Likert scale questions to aid in the data analysis process. Once the surveys were recreated, the researcher entered the responses for each participant into Qualtrics. The data were then exported for data analysis.

Demographics

The demographics for the study participants were captured by the NCQ. While studying the demographics is not a component of this study, the information was captured as part of the NCQ instrument. Overall, 30 college students participated in this study. Of the participants,

36.67% indicated they were Male and 63.33% indicated they were Female. The average age of the participants was 18 years of age. The participants were primarily White (not of Hispanic origin), with 23 (76.67%) respondents indicating that as their race. Of the remaining respondents, 3 respondents (10%) indicated they were Hispanic (Latin American), 2 respondents (6.67%) indicated Black (African-American), 1 respondent (3.33%) indicated Asian (Pacific Islander), and 1 respondent (3.33%) indicated their race as Other (see Table 6).

Scoring and Coding

To analyze the data, the data responses were exported out of Qualtrics. For the NCQ, the three open-ended questions were coded using the supplied scoring recommendations on the Scoring Key for Noncognitive Questionnaire (see Appendix D). Due to the low number of responses, only the researcher's scoring was utilized to determine the values of the responses for these questions. The scored open-ended questions and remaining 5-point Likert scale questions were coded within Qualtrics based on the Scoring Key for Noncognitive Questionnaire (see Appendix D). After all responses were scored, the Noncognitive Questionnaire Worksheet for Scoring (see Appendix E) was used to score the differing noncognitive variables by student. Variable scores were manually calculated by the researcher.

The SOBI was analyzed using Qualtrics only as all questions were based on a 4-point Likert scale. Qualtrics allows the input of score values for questions utilizing a Likert scale. In addition, scoring grouped questions can be automated within Qualtrics. For the SOBI-P, a scoring group was created for Fit and Value Involvement. Scoring groups for the SOBI-A were Energy for Involvement, Potential and Desire for Meaningful Involvement, and Shared or Complementary Characteristics. The SOBI utilizes a set of survey items to elicit responses from respondents to measure the attributes for the SOBI-P (see Table 7) and the SOBI-A (see Table 8)

Table 6

Research Participant Demographics

Characteristic	Total	Percentage	Institutional Averages*
Gender			
Female	19	63.33	62.19
Male	11	36.67	37.77
Race			
Black (African-American)	2	6.67	16.61
White (not of Hispanic origin)	23	76.67	69.16
Asian (Pacific Islander)	1	3.33	6.10
Hispanic (Latin American)	3	10.00	
American Indian (Alaskan native)	0	0.00	2.55
Other	1	3.33	5.45
Age			
18 years	20	67	59.21
19 years	10	33	38.94

Note. Demographic data collected via participant responses on the NCQ. * = Data retrieved from the Office of Undergraduate Admissions for the Fall 2018 entering first-year students.

Table 7

SOBI-Psychological (SOBI-P) Attribute Survey Items

Fit	Valued Involvement
1. I often wonder if there is any place on earth where I really fit in.	4. I generally feel that people accept me.
2. I am just not sure if I fit in with my friends.	6. I would like to make a difference to people or things around me, but I don't feel that what I have to offer is valued.
3. I would describe myself as a misfit in most social situations.	9. I could disappear for days and it wouldn't matter to my family.
5. I feel like a piece of a jig-saw puzzle that doesn't fit into the puzzle.	11. I feel like I observe life rather than participate in it.
7. I feel like an outsider in most situations.	12. If I died tomorrow, very few people would come to my funeral.
8. I am troubled by feeling like I have no place in this world.	16. I could not see or call my friends for days and it wouldn't matter to them.
10. In general, I don't feel a part of the mainstream of society.	18. I am not valued by or important to my friends.
13. I feel like a square peg trying to fit into a round hole.	
14. I don't feel that there is any place where I really fit in this world.	
15. I am uncomfortable that my background and experiences are so different from those who are usually around me.	
17. I feel left out of things.	

Note. Hagerty, B. M. (2015). Sense of belonging instrument (SOBI) development and use. Unpublished manuscript.

Table 8

SOBI-Antecedent (SOBI-A) Attribute Survey Items

Energy for Involvement	Meaningful Involvement	Potential for Shared or Complementary Characteristics
6. I want to be a part of things going on around me. 11. Fitting in with people around me matters a great deal. 13. Relationships take too much energy for me. 14. I just don't feel like getting involved with people.	1. It is important to me that I am valued or accepted by others. 2. In the past, I have felt valued and important to others. 3. It is important to me that I fit somewhere in this world. 7. It is important to me that my thoughts and opinions are valued. 8. Generally, other people recognize my strengths and good points. 10. All of my life I have wanted to feel like I really belonged somewhere. 12. I feel badly if others do not value or accept me.	4. I have qualities that can be important to others. 5. I am working on fitting in better with those around me. 9. I can make myself fit in anywhere.

Note. Hagerty, B. M. (2015). Sense of belonging instrument (SOBI) development and use. Unpublished manuscript.

based on the scoring measurement found in the Sense of Belonging (SOBI) Development and Use (Hagerty, 2015).

Results

The study involved the scoring of two survey instruments – the Noncognitive Questionnaire (NCQ) and the Sense of Belonging Instrument (SOBI). Each survey was coded and scored separately. Neither instrument identified a procedure for determining an overall total score. The researcher utilized the Mean score as the baseline for both survey instruments. The data analysis of these survey instruments follows.

Noncognitive Questionnaire (NCQ)

The NCQ asked respondents to answer 29 items to measure eight noncognitive variables. The scores for the eight variables were calculated for each participant. When calculating the overall score, the averages for the scored survey items for the variable were added together. Once the scores were calculated, the mean score was calculated by adding all participant variable scores and dividing by the number of participants. The standard deviation for each variable was determined as well. The only variations within the data analysis occurred when calculating scores for Successful Leadership Experience, Demonstrated Community Service, and Knowledge Acquired in a Field. Nine participants did not answer short-answer survey item No. 29. These three variables were calculated once, excluding item No. 29, and again to include item No. 29. The variations will be discussed later in this chapter. The participant scores, overall score, mean, and standard deviation were calculated for the participant population (see Table 9).

Positive Self-Concept or Confidence

The first variable is Positive Self-Concept or Confidence. This variable indicates if the participant demonstrates confidence, strength of character, determination, and independence

Table 9

Noncognitive Variable with Mean and Standard Deviation

Noncognitive Variable	Mean	Standard Deviation
Positive Self-Concept or Confidence	15	2
Realistic Self-Appraisal	8	1
Understands and Deals with Racism	13	2
Prefers Long-Range Goals to Short-Term	10	2
Availability of Strong Support Person	8	1
Successful Leadership Experience	5	1
Successful Leadership Experience+	*10*	*5*
Demonstrated Community Service	4	1
Demonstrated Community Service+	*7*	*3*
Knowledge Acquired in a Field	6	2
Knowledge Acquired in a Field+	*11*	*5*

Note. + = includes scores for item No. 29.

(Sedlacek, 2004). The score for this variable is calculated by combining the scores of six NCQ item responses (see Appendix E). The mean score for all participants for this variable is 15. Seventeen participants scored at or above the average score for this variable. The overall score for this variable was 15. The results of this variable indicate that a majority, 57%, of the participants demonstrate positive self-concept or confidence.

Realistic Self-Appraisal

Realistic self-appraisal means an individual recognizes and accepts their strengths and deficiencies, especially academic (Sedlacek, 2004). They also work hard at self-development and recognize the need to broaden their individuality. The overall participant score for this variable was 10, with a mean of eight. There were 10 participants (33%) who scored above the mean on this variable, 12 participants (40%) scored right at the mean of eight, and the remaining eight participants (27%) scored below the mean.

Understands and Deals with Racism

This variable is based on personal experiences of the participant. It aims to measure the participant's commitment to improving systematic racism and how they might handle a racist system. Scoring for this variable is based on the responses to four negatively constructed items and one positively constructed item. Of the participants, 17 (57%) scored at or below the mean, with eight scores at the mean and nine scores below the mean. Thirteen participants (43%) scored above the mean score of 13 on this variable. Based on the responses for this variable, the data suggests that most students are committed to making improvements to a decrease racism and prejudice within the system.

Prefers Long-Range Goals to Short-Term or Immediate Needs

The participants preference for deferring gratification by planning ahead and setting goals is measured within this variable. The mean score for this variable is 10, and 33% of the respondents (11) scored above the mean and 63% (19) scored at or below the mean. The data indicates this variable could be a weakness within the participant group.

Availability of a Strong Support Person

This variable determines if the participants believe if they have a strong support network or have someone to turn to in a crisis or for encouragement. This variable is determined using the responses of two negative construct items plus one positive construct item. The scoring model suggests a high score would be a seven. The mean score of eight for this variable indicates many of the participants have a support network to rely upon. Sixty-three percent (19) of the participants scored below the mean with the high score of seven. The remaining 11 participants scored higher than the mean, indicating either a weak or unavailable support network.

Successful Leadership Experience

Measuring this variable shows whether the participant demonstrates strong leadership from their background. This is one of the variables that was scored twice due to some participants failing to answer survey item No. 29, which is needed for scoring. Scoring for this variable considers the level of involvement within previous groups and/or activities.

When calculating this variable and excluding item No. 29, a positive score on this variable would fall below the mean based on the negative construct of the two items used for the score. For this score-adjusted variable, the high score would be two and the low score would be 10. The mean for this variable is five. Thirteen participants (43%) scored below the mean score, meaning they have previous leadership experience that factored in to their score. There were 17

participants who scored at or above the mean score for this variable. When excluding the open-ended scoring of item No. 29, the scores on this variable indicates most participants may not have developed leadership qualities based on the lack of leadership opportunities.

When including item No. 29 within the scoring model, the mean score increased to 10. Adding this scored item only increased the number to 14 participants (46%) who scored at or below the mean. The remaining 16 participants all scored below the mean. The data suggests that, with only one participant score changing, the scoring of item No. 29 has no impact on scoring of this variable.

Demonstrated Community Service

This variable was also scored twice, with item No. 29 and without item No. 29. It measures whether the participant is involved in his or her community. When scoring for this item and excluding item No. 29, there is only one positively constructed survey item utilized in the score. The mean score for this item was four and only 10 (33%) of respondents scored above the mean. The remaining 20 respondents all scored at or below the mean.

The scoring of this variable when including item No. 29 shows an increase in the mean to seven and a 10% increase in respondents scoring above the mean. Thirteen respondents (43%) scored above the mean, while the remaining 17 (57%) scored at or below.

When considering scoring for Community Service within the responses for item No. 29, the results of this variable are the same as when excluding the item. Most of the respondents did not indicate active engagement in community service-based activities or organizations. There was an increase in participants showing some engagement when factoring in item No. 29. However, that increase was not significant enough to shift the overall scoring of the variable when applied to the respondents.

Knowledge Acquired in a Field

The last variable, also impacted by item No. 29, is Knowledge Acquired in a Field. This variable indicates the level of knowledge sustained, or gained in a culturally related way, in field. The scoring of this variable uses the scores of two open-ended questions only. Both items are scored using the same scoring criteria (see Appendix E).

When excluding item No. 29, the mean score for this variable was six. The mean score increases to 11 when item No. 29 is included in the scoring. When reviewing the data, the percentage of respondents did not change when excluding item No. 29 nor when including item No. 29. Many respondents scored at or below the mean for both scoring models, with 19 (63%) being unable to identify education-related goals, groups, or activities.

Sense of Belonging Instrument (SOBI)

The SOBI is broken into two measurable parts. The first is the Psychological component, or the SOBI-P (see Appendix G). This measures the level of perceived sense of belonging (Hagerty, 2015). The second is the Antecedent component (SOBI-A), which measures the intensity of the antecedents, or precursors, of sense of belonging (Hagerty, 2015) (see Appendix H). The SOBI-P identifies and measures two defining attributes of Fit and Valued Involvement. The SOBI-A measures the Energy for Involvement, the Desire for Involvement, and the Potential for Shared or Complimentary Characteristics. The composite score of the SOBI-P and the SOBI-A was calculated by adding all assigned scores for each item (see Table 7 and Table 8). This calculated score is the level of sense of belonging for the respondents (Hagerty, 2015).

To analyze the SOBI, the researcher determined the overall mean score for the SOBI-P and the SOBI-A. The SOBI-P mean, and the SOBI-A mean were used to identify a baseline level for sense of belonging. In addition, the scores for each construct were combined to determine the

SOBI-P Total and SOBI-A Total. The mean scores and standard deviations were also identified (see Table 10).

SOBI-P Total Score

A respondent's sense of belonging is determined by the composite score of all items within the SOBI-P. To understand where the levels of sense of belonging fall within a range, a scale of belonging was calculated by multiplying the highest and lowest point scores by the number of survey items. The highest possible sense of belonging score is 72 and the lowest is 18. Respondents were placed along the scale of belonging based on their SOBI-P Total scores (see Figure 2).

When evaluating the level of sense of belonging, the mean score was 56. Exactly fifty percent of the respondents scored at or above the mean score on SOBI-P Total. Two respondents scored the highest possible score of 72 on the scale for the sense of belonging. Of the fifty percent below the mean, the lowest score was a 24 by one respondent.

Fit

The first attribute identified by the SOBI-P is the level of fit. Fit has been defined as "the perception that the individual's characteristics articulate with the system or environment" (Hagerty, 2015; Hagerty & Patusky, 1995, p. 9). Fit uses the composite of scores from 11 of the SOBI-P instruments for the respondent. The mean score for SOBI-Fit was 34, of which thirteen respondents (43%) scored at or above this score. There was only one respondent showing an extreme lack of fit with a score of 13 for their SOBI-P Fit score. Nine respondents were within one point of the SOBI-P Fit mean. Two respondents who scored at or above the mean for SOBI-P Total scored below the mean for SOBI-P Fit.

Table 10

Sense of Belonging Instrument Total Mean Scores and Standard Deviation

SOBI Construct	Mean	Standard Deviation
SOBI-P Fit	34	7
SOBI-P Valued Involvement	23	3
SOBI-P Total	*56*	*10*
SOBI-A Energy Involvement	9	2
SOBI-A Desire for Involvement	13	3
SOBI-A Shared Characteristics	6	1
SOBI-A Total	*27*	*5*

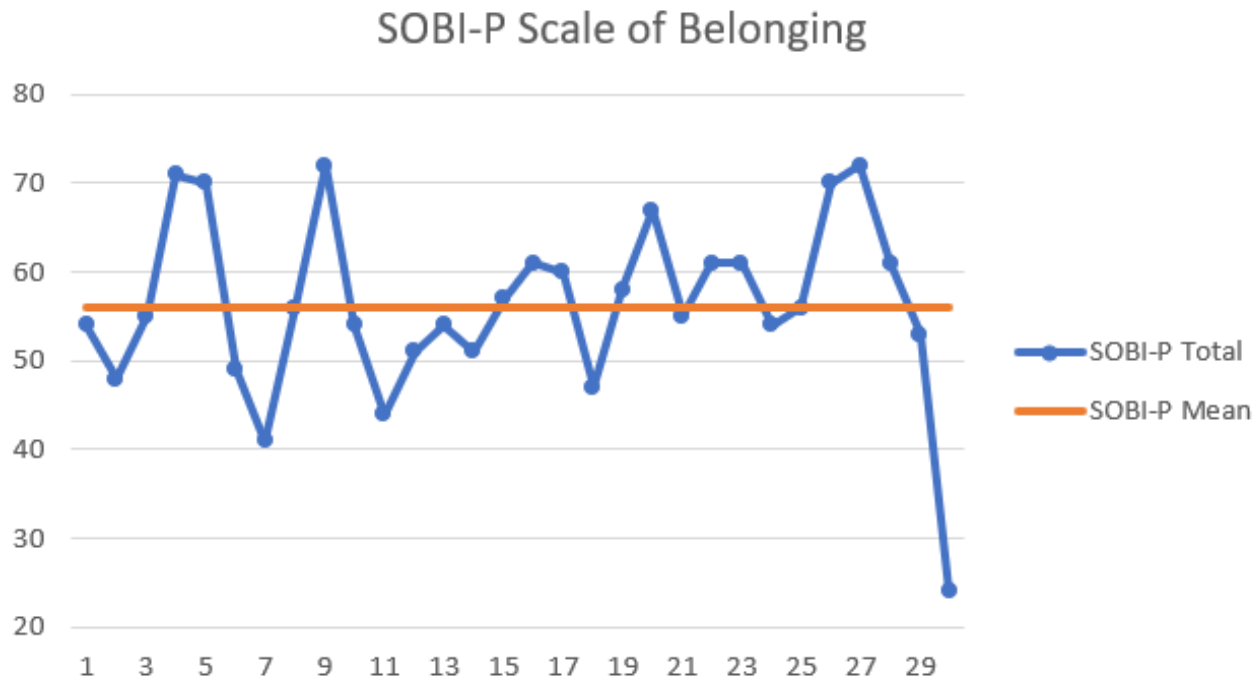


Figure 2. Sense of Belonging Instrument-Psychological (SOBI-P) scale with mean.

Valued Involvement

The second SOBI-P attribute, valued involvement, identifies the individuals experience of feeling valued, needed, or accepted (Hagerty, 2015; Hagerty & Patusky, 1995). This attribute is measured by combining the remaining seven scores of the SOBI-P. Fifty percent of the respondents (15) scored above the mean for SOBI-P Valued Involvement. All 15 respondents were the same ones who scored at or above the mean level for sense of belonging based on their SOBI-P total scores.

SOBI-A Total

The SOBI-A is another component of the SOBI and is calculated using the composite score of the 14 items within the SOBI-A. The SOBI-A measures the precursors, also known as antecedents, for sense of belonging. It assists in identifying how respondents feel about sense of belonging and what they do to increase their sense of belonging (Hagerty, 2015). The SOBI-A Total reflects the motivation for and ability to obtain a sense of belonging (Hagerty, 2015).

The SOBI-A Total mean score was 27 for the respondents. Seventeen of the respondents scored at or above the mean for their SOBI-A Total. A scale of antecedents was created by multiplying the highest point value by the number of survey items. The high score on the scale of antecedent is 56 and the low score is 14. Based on this derived scale, the highest respondent score was 39, with the lowest respondent score of 16 (see Figure 3). The SOBI-A Total data is better understood through the individual antecedent outcomes.

Energy Involvement

The Energy for Involvement antecedent is used to determine how much effort an individual may put into the development. The score for this antecedent was calculated using four of the SOBI-A survey items. The mean score for this antecedent was nine, and 21 (70%)

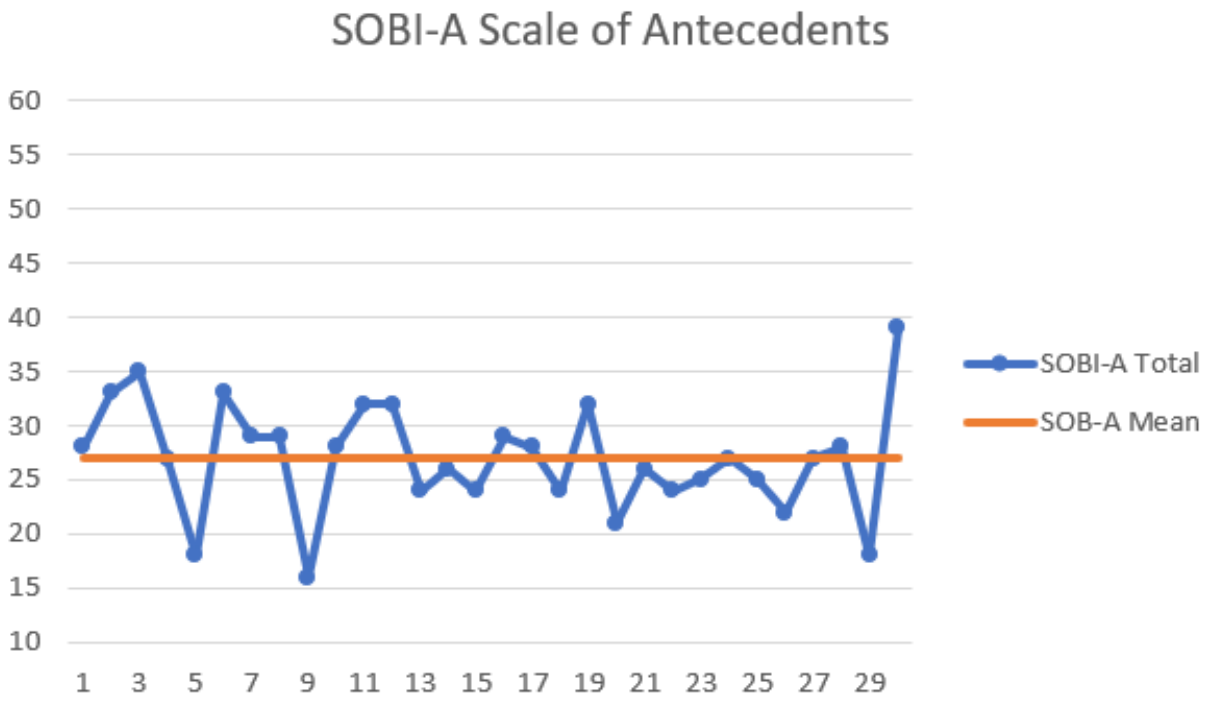


Figure 3. Sense of Belonging Instrument-Antecedent (SOBI-A) scoring scale with mean.

respondents scored at or above the mean. The data suggests that a significant majority of the respondents have been engaged with other individuals around them.

Potential and Desire for Meaningful Involvement

The antecedent of Potential and Desire for Meaningful Involvement identifies what the respondent has done to become engaged in their surroundings. The score for this antecedent was calculated using seven of the SOBI-A survey items. A mean score of 13 was calculated for the respondents. Eighteen respondents (60%) scored at or above the mean on this antecedent. This data suggests that most respondents feel valued by others and have a desire to be valued.

Potential for Shared or Complimentary Characteristics

The last measured antecedent is the potential for shared or complementary characteristics. This antecedent identifies the level a respondent feels they could contribute to others around them. The mean score based on the responses was six. As with the other antecedents, this one also identified a significant majority of respondents (20 respondents, 67%) score at or above the mean.

Cross-Survey Analysis

To measure whether there is a positive relationship between noncognitive variables and sense of belonging, the data for the survey instruments were combined into a master table (see Appendix I). The noncognitive variable scores were grouped by participants who scored at or above the mean for the SOBI-P Total (see Table 11) and for the SOBI-A Total (see Table 12). The combined data were imported into SPSS, and a bivariate correlation, Pearson's r, analysis was performed. The results were interpreted by determining the correlation between the NCQ variables and the SOBI-P attributes and compared to the SOBI-A attributes.

Table 11

Noncognitive Variable Scores Based on Highest Sense of Belonging Instrument-Psychological (SOBI-P) Total Score

SOBI-P Fit	SOBI-P Valued Involvement	SOBI-P Total	Self-Con	Self-Apr	Rac	Goal	Support	Ldrship	*Ldrship+*	Com Serv	*Com Serv+*	Kno Acq	*Kno Acq+*
44	28	72	14	8	12	12	7	2	23	5	14	6	21
44	28	72	18	8	15	11	7	4	14	4	9	9	20
44	27	71	16	10	11	10	8	4	4	3	3	7	7
44	26	70	16	8	16	9	7	4	19	5	12	4	18
43	27	70	18	10	13	11	7	5	11	5	8	9	15
41	26	67	15	7	10	9	10	5	12	4	8	6	10
37	24	61	17	10	14	12	8	3	9	4	7	6	10
36	25	61	14	9	15	8	7	4	11	3	8	4	13
37	24	61	18	9	13	8	7	5	5	4	4	7	7
36	25	61	15	8	15	10	9	7	14	4	8	5	14
36	24	60	14	6	15	11	7	6	6	3	3	5	5
34	24	58	12	10	13	11	10	5	10	4	8	6	9

Table 11 (continued)

SOBI-P Fit	SOBI-P Valued Involvement	SOBI-P Total	Self-Con	Self-Apr	Rac	Goal	Support	Ldrship	*Ldrship+*	Com Serv	*Com Serv+*	Kno Acq	*Kno Acq+*
34	23	57	12	10	13	10	7	2	14	5	5	5	14
33	23	56	18	10	12	10	7	3	7	4	6	5	10
33	23	56	16	7	15	13	7	7	7	4	4	9	9

Note. Self-con = Positive Self-Concept or Confidence; Self-Arp = Realistic Self-Appraisal; Rac = Understands and Deals with Racism; Goal = Prefers Long-Range Goals to Short-Term; Support = Availability of Strong Support Person; Ldrship = Successful Leadership Experience; Com Serv = Demonstrated Community Service; Kno Acq = Knowledge Acquired in a Field. Highlighted values indicate scores based on the Mean for the NCQ variables. + = includes scores for item No. 29.

Table 12

Noncognitive Variable Scores Based on Highest Sense of Belonging Instrument-Antecedent (SOBI-A) Total Scores

SOBI-A Energy Involvement	SOBI-A Desire for Involvement	SOBI-A Shared Characteristics	SOBI-A Total	Self-Con	Self-Apr	Rac	Goal	Support	Ldrship	*Ldrship+*	Com Serv	*Com Serv+*	Kno Acq	*Kno Acq+*
11	13	7	27	18	8	15	11	7	4	14	4	9	9	20
8	15	4	27	16	10	11	10	8	4	4	3	3	7	7
7	12	6	29	18	9	13	8	7	5	5	4	4	7	7
10	13	7	28	15	8	15	10	9	7	14	4	8	5	14
10	14	6	28	14	6	15	11	7	6	6	3	3	5	5
9	16	7	32	12	10	13	11	10	5	10	4	8	6	9
9	15	7	29	16	7	15	13	7	7	7	4	4	9	9
11	19	7	35	17	8	17	15	7	6	10	4	6	9	13
10	14	6	28	17	8	13	14	7	7	19	5	12	9	20
11	15	6	28	14	9	13	7	10	5	5	4	4	5	5
12	15	6	27	14	8	13	8	9	4	8	5	9	3	5
8	18	6	32	11	7	13	9	7	5	5	5	5	7	7

Table 12 (continued)

SOBI-A Energy Involvement	SOBI-A Desire for Involvement	SOBI-A Shared Characteristics	SOBI -A Total	Self-Con	Self-Apr	Rac	Goal	Support	Ldrship	*Ldrship+*	Com Serv	*Com Serv+*	Kno Acq	*Kno Acq+*
7	16	8	33	17	7	15	10	7	5	8	5	6	6	8
9	14	8	33	16	8	16	8	7	6	13	5	11	6	11
11	17	6	32	15	8	15	12	8	6	8	4	5	8	10
5	13	5	29	11	7	10	10	7	4	4	4	4	9	9
8	18	9	39	14	8	16	9	11	4	4	4	4	4	4

Note. Self-con = Positive Self-Concept or Confidence; Self-Arp = Realistic Self-Appraisal; Rac = Understands and Deals with Racism; Goal = Prefers Long-Range Goals to Short-Term; Support = Availability of Strong Support Person; Ldrship = Successful Leadership Experience; Com Serv = Demonstrated Community Service; Kno Acq = Knowledge Acquired in a Field. Highlighted values indicate scores based on the Mean for the NCQ variables. + = includes scores for item No. 29.

NCQ Variables by SOBI-P

There were fifteen participants who scored at or above the mean score on the SOBI-P Total score. The mean was used as a benchmark to determine what constitutes a high level of sense of belonging for comparison to the NCQ variables (see Table 13). A correlation analysis was conducted to determine the relationship significance between the NCQ variables to Fit and Valued Involvement (see Table 14).

For the variable of Positive Self-Concept, 10 out 15 participants scored at or above the overall mean. This variable had statistically significant linear relationship ($p<0.01$) on both Fit and Valued Involvement. Both attributes indicate a positive relationship between Positive Self-Concept with Fit and Value Involvement.

Twelve participants scored at or above the mean for Realistic Self-Appraisal. This variable also indicated a significant relationship with Fit and Valued Involvement. Both attributes show a positive direction and these variables would increase together.

On Understands and Deals with Racism, which is a negatively constructed variable, eight of the participants scored below the mean. While this variable has a statistically significant relationship on both Fit and Valued Involvement, Fit has a lower significance than Valued Involvement. The relationship between this variable and Fit was calculated at 0.049 significance level. Valued Involvement was marked at a greater level of significance at 0.006.

Eleven of the participants scored at or above the overall mean for Prefers Long-Range Goals. This variable was statistically significant in both SOBI-P attributes as well. For Fit, the direction was positive with a significance level of 0.015. Valued Involvement had a stronger positive correlation with a significance level of 0.002.

Table 13

Percentage of SOBI-P Total Score Participants by NCQ Variable

	No. of Participants	Percentage
Positive Self-Concept or Confidence	10	0.67
Realistic Self-Appraisal	12	0.80
Understands and Deals with Racism	8	0.53
Prefers Long-Range Goals to Short-Term	11	0.73
Availability of Strong Support Person	10	0.67
Successful Leadership Experience	8	0.53
Successful Leadership Experience+	10	0.67
Demonstrated Community Service	12	0.80
Demonstrated Community Service+	9	0.60
Knowledge Acquired in a Field	9	0.60
Knowledge Acquired in a Field+	7	0.47

Note. N = 15. + = Includes scores from Item No. 29 for full scoring.

Table 14

Correlation Table Between NCQ Variables and the SOBI-P Attributes

		SOBI-P Fit	SOBI-P Valued Involvement
Positive Self-Concept or Confidence	Pearson r	.571**	.654**
	Sig. (2-tailed)	0.001	0.000
Realistic Self-Appraisal	Pearson r	.570**	.610**
	Sig. (2-tailed)	0.001	0.000
Understands and Deals with Racism	Pearson r	.351*	.476**
	Sig. (2-tailed)	0.049	0.006
Prefers Long-Range Goals to Short-Term	Pearson r	.427*	.532**
	Sig. (2-tailed)	0.015	0.002
Availability of Strong Support Person	Pearson r	0.255	0.347
	Sig. (2-tailed)	0.158	0.052
Successful Leadership Experience	Pearson r	0.130	0.210
	Sig. (2-tailed)	0.480	0.248
Successful Leadership Experience+	Pearson r	.430*	.433*
	Sig. (2-tailed)	0.014	0.013
Demonstrated Community Service	Pearson r	.401*	.460**
	Sig. (2-tailed)	0.023	0.008
Demonstrated Community Service+	Pearson r	.380*	.385*
	Sig. (2-tailed)	0.032	0.030
Knowledge Acquired in a Field	Pearson r	0.316	.371*
	Sig. (2-tailed)	0.078	0.037
Knowledge Acquired in a Field+	Pearson r	.483**	.500**
	Sig. (2-tailed)	0.005	0.004

Note. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). + = Includes scores from Item No. 29 for full scoring.

Ten participants scored at or above the mean indicating for Availability of a Strong Support Person. Despite a high percentage of the participants scoring above the mean on this variable, there is no statistical relationship between this variable and Fit and Valued Involvement. Both attributes have a significance level of greater then 0.05, scoring 0.158 and 0.052 respectively.

The Successful Leadership Experience, Demonstrated Community Service, and Knowledge Acquired in a Field variables were coded twice as mentioned earlier. There were eight participants at or below the mean for Successful Leadership when scoring with only the negatively constructed items. The number of participants increases to ten when factoring in the full scoring of this variable. For Community Service, twelve participants scored at or above the mean on the adjusted score and nine scored at or above for the full scoring of the variable. The Knowledge Acquired variable saw nine and seven participants respectively when accounting for the adjusted and full scoring.

The significance of these variables on Fit and Valued Involvement are mostly positive. When not accounting for item No. 29, Successful Leadership Experience has no statistical significance at 0.480 and 0.248 respectively. However, this variable becomes a positive relationship with a high level of significance when scoring accounted for the values of item No. 29.

The Demonstrated Community Service variable has a positive significance level and positive relationship to Fit and Valued Involvement irrespective to how it was scored. The significance level decreased slightly for Fit when accounting for item No. 29. However, it still suggests a positive relationship. The relationship is much stronger for Valued Involvement (0.008) without scoring item No. 29 than it is when fully scored (0.030).

Arguably the strongest relationship for Fit and Valued Involvement involves the full scoring of Knowledge Acquired in a Field. Including item No. 29 results in a significance level of 0.005 and 0.004 respectively. Fit does not maintain its level of significance (0.078) when item No. 29 is not included in scoring but remains significant for Valued Involvement (0.037).

NCQ Variables by SOBI-A

There were seventeen participants who scored at or above the mean score on the SOBI-A Total score. The SOBI-A Total is used to determine the antecedents that led to a sense of belonging by the respondent. The mean was used as a benchmark to determine what constitutes the participants experiences in relation to their sense of belonging (see Table 15).

As with the SOBI-P, a correlation analysis was conducted to determine the relationship significance for Energy Involvement, Desire for Involvement, and Shared Characteristics as measured by the SOBI-A (see Table 16).

For the variable of Positive Self-Concept, 10 participants scored at or above the overall mean. This variable is statistically significant at the 0.01 level with a Pearson r significance level of 0.001 for Energy Involvement and 0.023 for Desire for Involvement. This indicates a positive direction of growth in this attribute as this variable is developed. However, Shared Characteristics as not statistically significant at a level of 0.077.

Twelve participants scored at or above the mean for Realistic Self-Appraisal. This variable scored similarly to Positive Self-Concept or Confidence. There is a positive level of significance between Energy Involvement (0.000) and Desire for Involvement (0.042). There is no statistically significance between this variable and Shared Characteristics.

Table 15

Percentage of SOBI-A Total Score Participants by NCQ Variable

	No. of Participants	Percentage
Positive Self-Concept or Confidence	10	0.59
Realistic Self-Appraisal	12	0.71
Understands and Deals with Racism	8	0.47
Prefers Long-Range Goals to Short-Term	11	0.65
Availability of Strong Support Person	10	0.59
Successful Leadership Experience	10	0.59
Successful Leadership Experience+	6	0.35
Demonstrated Community Service	15	0.88
Demonstrated Community Service+	6	0.35
Knowledge Acquired in a Field	12	0.71
Knowledge Acquired in a Field+	5	0.29

Note. N = 17. + = Includes scores from Item No. 29 for full scoring.

Table 16

Data Correlation Between NCQ Variables and the SOBI-A Attributes

		SOBI-A Energy Involvement	SOBI-A Desire for Involvement	SOBI-A Shared Characteristics
Positive Self-Concept or Confidence	Pearson r	.562**	.402*	0.317
	Sig. (2-tailed)	0.001	0.023	0.077
Realistic Self-Appraisal	Pearson r	.590**	.361*	0.141
	Sig. (2-tailed)	0.000	0.042	0.440
Understands and Deals with Racism	Pearson r	.664**	.741**	.642**
	Sig. (2-tailed)	0.000	0.000	0.000
Prefers Long-Range Goals to Short-Term	Pearson r	.408*	.495**	0.322
	Sig. (2-tailed)	0.021	0.004	0.073
Availability of Strong Support Person	Pearson r	.402*	.514**	.486**
	Sig. (2-tailed)	0.023	0.003	0.005
Successful Leadership Experience	Pearson r	.355*	.518**	.528**
	Sig. (2-tailed)	0.046	0.002	0.002
Successful Leadership Experience+	Pearson r	.443*	-0.115	-0.078
	Sig. (2-tailed)	0.011	0.530	0.672
Demonstrated Community Service	Pearson r	.491**	.386*	.363*
	Sig. (2-tailed)	0.004	0.029	0.041
Demonstrated Community Service+	Pearson r	.478**	-0.058	0.028
	Sig. (2-tailed)	0.006	0.752	0.880

Table 16 (continued)

		SOBI-A Energy Involvement	SOBI-A Desire for Involvement	SOBI-A Shared Characteristics
Knowledge Acquired in a Field	Pearson r	0.040	0.325	0.143
	Sig. (2-tailed)	0.826	0.069	0.435
Knowledge Acquired in a Field+	Pearson r	.356*	-0.087	-0.075
	Sig. (2-tailed)	0.045	0.637	0.684

Note. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). + = Includes scores from Item No. 29 for full scoring.

On Understands and Deals with Racism, which is a negatively constructed variable, eight of the participants scored below the mean. This variable resulted in very high levels of significance for all three attributes. Each attribute returned a significance of 0.000. Eleven of the participants scored at or above the overall mean for Prefers Long-Range Goals. The significance level of this variable was positive for Energy Involvement and for Desire for Involvement. However, there was no statistical significance between this variable and Shared Characteristics.

Ten participants scored at or above the mean indicating for Availability of a Strong Support Person. All three SOBI-A attributes saw a positive statistical significance with this variable. Desire for Involvement and Shared Characteristics saw a higher significance compared to Energy Involvement.

The Successful Leadership Experience, Demonstrated Community Service, and Knowledge Acquired in a Field variables were coded twice as mentioned earlier. There were ten participants at or below the mean for Successful Leadership when scoring with only the negatively constructed items. The number of participants decreases to six when factoring in the full scoring of this variable. For Community Service, fifteen participants scored at or above the mean on the adjusted score and six scored at or above for the full scoring of the variable. The Knowledge Acquired variable saw twelve and five participants respectively when accounting for the adjusted and full scoring.

The correlation between Successful Leadership Experience, Demonstrated Community Service, and Knowledge Acquired in a Field and the SOBI-A attributes showed an overall negative relationship. Without item No. 29, Successful Leadership Experience and Demonstrated Community Service were the only variables to have a positive level of significance on all three

SOBI-A attributes. Adding in item No. 29 had no significant relationship to three variables for Desire for Involvement and for Shared Characteristics.

Data Analysis: Research Question Two

Research question two is: Of the noncognitive variables of positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person, successful leadership experience, and demonstrated community service, which ones have the most influence on the sense of belonging?

Data collected to be analyzed is through observation of the COAD 1000 Core Competencies, which are Campus Engagement, Academic Engagement, Student Learning, and Personal Development. Each Core Competency was aligned to a specific noncognitive variable (see Table 5) for measurement.

Core Competencies and Noncognitive Variables

The listed purposes of the COAD course were to assist students with developing a sense of belonging, developing academic skills, developing life skills, and developing a direction. Each of these goals are covered within the overarching core competencies. The researcher aligned (see Table 5) the COAD 1000 Course Competencies with the noncognitive variables (Tracey & Sedlacek, 1984). The interpretation of the researcher was that specific noncognitive variables could be influenced by the core competencies based on this alignment. Class assignments were categorized within the four competencies and, in turn, may have influenced the noncognitive variables of the participants. The next sections describe each course competency, the alignment to the noncognitive variables, and related course assignments.

Academic Engagement

The Academic Engagement competency is designed to assist students with the transition from high school to college, goal setting, and develop academic skills. This competency was aligned with the following noncognitive variables: Prefers Long-Range Goals to Short-Term or Immediate Needs and Knowledge Acquired in a Field.

The Knowledge Acquired in a Field variable was aligned with this competency and was addressed within specific assignments. One of the main assignments was the required Career Exploration paper. This assignment was designed to guide students in learning about academic and career requirements needed for their specific academic major. The requirements of this assignment allow it to compliment the Knowledge Acquired in a Field variable. Students were required to complete a virtual job shadow about their intended career, research their major, and potentially interact with a faculty member within their field.

While Prefers Long-Range Goals to Short-Term Immediate Needs was a focus within this competency, there was not a required assignment to address this variable. A suggested assignment was a goal worksheet. This goal worksheet asked respondents to identify a specific goal, state how it could be measured or achieved, and to determine if the goal is relevant. Unfortunately, since there was not a required goal setting assignment, measuring the impact of this variable is inconclusive.

Campus Engagement

The Campus Engagement competency appears to be the most closely tied to the noncognitive variables. This competency was aligned with Availability of a Strong Support Person and Demonstrated Community Service. The goal for this competency was to assist

students with feeling part of ECU, create Peer to Peer and Peer to Faculty connections, and encouragement involvement in co-curricular activities.

Through the Career Exploration paper, students were encouraged to engage faculty within their academic major. This interaction was anticipated to assist students with finding an academic resource that would guide and assist them throughout their academic career. The other variable, Demonstrated Community Service, was not directly addressed through assignments within the COAD course. One suggested method proposed to address this variable was to have a guest speaker from one of departments within the Office of Student Affairs to speak to the COAD classes. Since this was not a required component, the influence of this competency on noncognitive variables is inconclusive.

Personal Development

Some of the goals of the Personal Development competency were to encourage identity exploration, appreciate differences, and engage in conversations about civility and social justice. This competency was aligned with three noncognitive variables: Positive Self-Concept or Confidence, Understands and Deals with Racism, and Successful Leadership Experience. Two of these variables were directly connected to two required assignments of the COAD course.

The first required assignment was the Common Reading Experience. This assignment was designed to be a common experience which facilitated conversation related to themes within the chosen text. As chapters were assigned, the themes within those chapters were part of planned classroom discussions scheduled by the instructors. The common text was selected by the institution and provided to the instructors. The text was designed to connect students with their identity and improve their self-confidence.

The Understands and Deals with Racism variable did not have a direct assignment relationship within this competency. However, discussions should have occurred when addressing the topic of Social Justice and Civility. The lack of required assignment makes it difficult to fully measure the influence of this competency. But the topics within this competency allow the researcher to assume that a possibility of influence exists.

The third variable aligned within this competency, Successful Leadership Experience, was very minimally addressed within the COAD assignments. While one of the goals of the Personal Development competency is to focus on leadership values and skills, there really was no focus built within the course to address this goal.

Student Learning

The Student Learning competency was aligned with only one noncognitive variable – Realistic Self-Appraisal. This variable is based within an academic belief that the student recognizes deficiencies and works hard at self-development. Goals of the competency are to develop life skills such as time management, stress management and resiliency, relationships, and campus safety. These goals tie into the noncognitive variable through the required assignment of the Resiliency Reflection paper. The reflection component asked students to identify how they control their environment factors like money, free time within their schedule, or access to alcohol and drugs. The response to these environment factors, either positive or negative, would have a direct impact on a student's self-appraisal.

Summary

The purpose of this study was to determine the impact of developing noncognitive variables on the sense of belonging. The NCQ was utilized to gain an understanding of where the

participants scored on the positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person, successful leadership experience, and demonstrated community service noncognitive variables. The data suggests that most participants scored within acceptable ranges based on the mean score for the eight NCQ variables.

When analyzing the SOBI, the data indicated that fifty percent of the participants feel a high-level sense of belonging. The evidence for this is supported by the results of the SOBI-P Total score. In addition, a significant majority of participants also experienced strong connections to the antecedents of sense of belong with 67% scoring above the mean on the SOBI-A. The overall results of the SOBI appear to be promising and show a potential relationship between the NCQ variables and the SOBI.

A correlation analysis of the two survey instruments utilized the high scoring participants for the level of sense of belonging and compared them to the eight variables. The initial review indicates a positive correlation between the noncognitive variables and sense of belonging. When examining the relationship between the NCQ variables and the SOBI-P, seven of the eight variables (when properly scored) indicate a positive significant relationship. The variable Availability of a Strong Support Person had no significance on the SOBI-P attributes. Only one score-adjusted variable showed no significant relationship between Fit and Valued Involvement.

The relationship between the noncognitive variables and the SOBI-A showed a few different results. For Energy Involvement, all eight appropriately scored variables showed a positive significant relationship. The only variable to show a negative relationship was the altered variable Knowledge Acquired in a Field.

Desire for Involvement had positive relationships for most of the variables. Seven of the eight variables indicate a positive significant relationship to the Desire for Involvement attribute. Knowledge Acquired in a Field has a negative relationship for both the properly score and the adjusted score based on item No. 29. Successful Leadership experience had a positive relationship when excluding item No. 29 but a negative relationship when including item No. 29 in the scoring.

As for Shared Characteristics, this attribute had very little significance to the noncognitive variables unlike the others. Four of the eight variables had a negative significant relationship to this attribute. All three of the score adjusted variables (Successful Leadership Experience, Demonstrated Community Service, and Knowledge Acquired in a Field) had a negatively significant relationship when item No. 29 was added to the scoring. The only variables with a positive relationship were Understands and Deals with Racism, Availability of a Strong Support Person, Successful Leadership Experience, and Demonstrated Community Service.

A summary of the findings as they apply to the research questions, as well as limitations and recommendations for further research, will be provided in Chapter 5.

CHAPTER 5: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This survey study was to determine if developing noncognitive variables in first-year students has an identifiable impact on their sense of belonging to the campus community. The study was conducted across two first-year seminar courses at a large public university in the southeast, with participants representing multiple student backgrounds and academic majors. The goal of the research is to provide support for combining noncognitive skill development, with already established cognitive skill development practices, as a more influential method for student development.

The purpose of this study was to determine if noncognitive skill development can influence the sense of belonging in first-year students by answering the following research questions:

1. How does the development of noncognitive variables influence the sense of belonging experienced by first-year students that participate in a COAD 1000 course?
2. Of the noncognitive variables of positive self-concept, realistic self-appraisal, understanding of and an ability to deal with racism, preference for long-term goals over more immediate, short-term needs, availability of a strong support person, successful leadership experience, and demonstrated community service, which ones have the most influence on the sense of belonging?
3. How do the competencies of a first-year student seminar course influence noncognitive variables?

Institutional programming already focuses heavily on the cognitive development of first-year students. However, an understanding of the motivation of first-year students to become part of

the university environment is lacking. The study also hoped to answer the research question of whether there is a correlation between certain noncognitive variables on the sense of belonging.

Summary of Findings

The following section provides a summary of the overall results from the Noncognitive Questionnaire (NCQ) and the Sense of Belonging Instrument (SOBI). It also addresses some of points identified within Chapter 2. The results of the correlation analysis of the two survey instruments are addressed, and limitations and recommendation for future research are identified.

NCQ Results

The results of the NCQ suggest that the development of noncognitive variables is essential to first-year students. Only two students scored below average on most of the variables. All other students scored at or above averages on four or more variables. The data suggest that, after a full semester of schooling, first-year students are developing a connection to their beliefs. Four variables saw a more significant percentage of participants score at or above average: Positive Self-Concept or Confidence, Realistic Self-Appraisal, Understands and Deals with Racism, and Availability of a Strong Support Person. One variable saw a high number of students score below average, Prefers Long-Range Goals to Short-Term, which could be an area of concern. If first-year students struggle to identify long-range goals, they could face uncertainty regarding the purpose of their educational pursuits. The remaining three variables are difficult to interpret due to the lack of clarity on how to respond to Item No. 29 of the NCQ. With a sizeable portion of participants not answering the question, explaining the impact of these variables is challenging. When adjusting for the altered responses, the three variables of Successful Leadership Experience, Demonstrated Community Service, and Knowledge Acquired

in a Field, suggest first-year students may need additional guidance in tapping into extracurricular engagement.

Sense of Belonging

Regarding sense of belonging, the results show that half of the participants feel they belong based on the overall average of scores on the SOBI-P. The results suggest that the sense of belonging in first-year students is high after one semester of college. The two attributes of Fit and Valued Involvement correlate to the participant's sentiments based on the scores within the range of the average. The results show that many participants believe they fit in their current environment and that half of the participants feel valued or accepted. Also, the results of the SOBI-A indicate that students feel roughly the same regarding their desire to be involved. Most students scored close to the average when evaluating the antecedent attributes of Energy for Involvement, Desire for Involvement, and Shared Characteristics.

Interpretations of the Findings

To understand the results of the study, the two major components of the study – sense of belonging and noncognitive variables – were reviewed and compared to the elements mentioned within the review of the literature. The antecedents of sense of belonging were compared to high-impact practices, and the psychological attributes were compared to identity. The noncognitive variables were analyzed individually by the researcher to evaluate the level of influence within the participant group. They were also reviewed based on the pairing of the competencies used for first-year student development.

Sense of Belonging and High-Impact Practices

The high-impact practices, as listed previously in Table 1, have been identified as meaningful ways to engage students and promote student success (Kuh, 2008; National Survey

of Student Engagement, 2007; Tukibayeva & Gonyea, 2014). These practices align well with the antecedents measured by the SOBI-A. The scores for the SOBI-A Energy for Involvement measurement indicate that first-year students have a desire to be involved. The scores for this attribute support this claim as many scored at or above average. This energy for involvement could be further developed by implementing more learning communities (Tukibayeva & Gonyea, 2014). First-year students may be more inclined to commit more energy to become involved if they were in a formal program with their peers. Another high-impact practice which could promote energy for involvement would be researching with faculty. Providing first-year students opportunities to work with faculty early in their educational careers should result in increased retention and a stronger sense of belonging.

The desire for involvement antecedent was used to determine what the student has done to increase their engagement. The results of the study for this antecedent did show scores were on a broader scale than the other antecedents. This would suggest that first-year students may be unsure of how to develop a desire to be involved. Improving this antecedent could be accomplished by providing first-year students with more service-learning courses. Service-learning courses are high-impact practices rooted within a community project. First-year students may be more compelled to show a desire to be involved if they see their peers joining together for a common goal such as food drives for a food pantry or assisting with community recovery after a natural disaster. Another high-impact practice that might improve the desire for involvement would be studying abroad. Students with an interest in study abroad may be more likely to engage and interact with peers while developing a cultural understanding. Though difficult for first-year students to participate in study abroad options, a systematic approach to exposing them to the benefits could be employed.

The potential for shared characteristics was the final antecedent to be measured and produced low results as anticipated by the researcher. This antecedent measured the level students feel they could contribute to others. This is challenging to measure in first-year students as they are in a new environment and they are encouraged to focus on their development. A gradual introduction to internships or anticipated senior experiences could assist in developing this antecedent. However, of the different measures, this one appears to be the most challenging to first-year students and their sense of belonging.

Sense of Belonging and Identity

Tajfel's (1975) belief that individuals strive to achieve a satisfactory concept or image of themselves within society, or self-definition, is very closely tied to the attributes of fit and valued involvement. Fit is the perception an individual has about how they connect to their environment. While half of the participants scored at or above average, the range of scores was wide. This result is not surprising from the perspective of first-year students. The results indicate most of the students feel like they fit in their current environment. However, the range of scores within the data support the struggles experienced by first-year students.

The feeling of being valued, needed, or accepted is measured by the valued involvement attribute and can be affiliated to group categorization (Hogg, 2014; Hogg & Reid, 2006; Hogg & Terry, 2000). Like fit, this attribute saw a range of scores both above and below the average. The institution where this study was conducted tries to build a sense within all first-year students that they belong and are valued. A challenge with measuring this attribute is due to the efforts first-year students may or may not put into group identification. Students who are more motivated to join a specific group would show a higher level of valued involvement. If a first-year student is

not interested in joining a group, their level of valued involvement may be significantly lower than their peers.

NCQ Variable Analysis

One of the goals of the study was to determine if developing noncognitive variables influenced the sense of belonging of first-year students. This assessment began with understanding how the participants scored on the NCQ. Of the eight variables, many of the students scored at or above average on each one. This suggests that many first-year students developed a strong belief in themselves throughout the first semester. However, when analyzing the data, there are some areas of concern.

When looking at the individual variables, most students indicated they had a high level of self-confidence and determination. This variable could be interpreted as one of the more important as a one could suggest a positive self-confidence can lead to more intentional motivation. Pairing with the variable Realistic Self-Appraisal, which identifies if the respondent understands the need for continued personal development, indicates many of the participants are very self-aware. These two variables show a promising early result of the importance of noncognitive variables.

Two variables that indicate room for growth and focus within the study group are Understands and Deals with Racism and Prefers Long-Range Goals to Short-Term or Immediate needs. When looking at the system around the racism variable, this variable is heavily driven by the student's personal experiences. This variable is one of the few variables in which the researcher reviewed the participant demographics post-study. The results indicate students are committed to helping make improvements to reduce racism and prejudices. Fifty-seven percent responded in a manner to support this assessment. To gain an anecdotal perspective, the

researcher reviewed the demographic data. Seventy-six percent of the participants identified their race as White (not of Hispanic Origin) with the next largest race group being Hispanic (Latin American) at ten percent.

The other variable of concern, involving goals, isn't as personal as the racism variable but is just as telling considering a significant majority of students scored below the average on this variable. Planning and setting goals is a focus of the COAD course yet the participants seemed to have struggled with identifying long-term goals of significance. This result suggests that first-year students may still be trying to figure out their direction, which could be expected within the first semester. The respondents who indicated a strong response to this variable identified their educational goals and their aspirational career goals. Though the population size of the study was limited, this variable may be of concern from the retention perspective. If students cannot identify long-range goals, then a different approach to educational and career development may be needed.

A variable that the researcher determined could stand alone when evaluating is the Availability of a Strong Support Person. This variable is unique to the individual respondent, which is why it was analyzed on its own merit. Many of the students indicated they did have someone they could turn to if they needed encouragement. This is a very positive result for the study as having a strong support person may assist the student with their academic motivation and persistence. This variable may be one that could be measured early in the semester to allow institutional support to those who indicate low access to a strong support network.

The final three variables were grouped due to their related scoring metric. These variables look at leadership experience, community service opportunities, and career field knowledge. Within a first-year group, the responses were very inconsistent. Some respondents even chose

not to answer the main survey item needed for scoring. This causes the reliability of these variables to be questionable. First, the lack of responses may have been due to a failure to explain how to respond to the survey item properly. Second, these variables were scored twice, once to include those who responded and once using only the items that were answered. The data analysis provided in the previous chapter indicated including or excluding the provided responses for the survey item in question statistically did not change the overall results for these variables. The results of these three variables suggest that the study participants lacked leadership and community engagement traits. It also suggested that many were unable to identify goals or activities tied to their educational path. This supports the results of the previous variable that looked at the preference of long-range goals as compared to short-term goals.

SOBI Analysis

As mentioned previously, the SOBI measures two sets of attributes – psychological attributes and the antecedents to those attributes (Hagerty & Patusky, 1995). The SOBI-P measures Fit and Valued Involvement, while the SOBI-A measures Energy Involvement, Desire for Involvement, and Shared Characteristics. The SOBI-P was used in the study to determine an overall sense of belonging within the study group. Based on the survey results, exactly half of the participants indicated a positive sense of belonging when using the Mean as the base score. Some participants scored within a point or two of the average, which could lead to an interpretation that a significant majority have a strong sense of belonging. To understand how this determination was made, the correlation for each attribute was studied for the SOBI-P and the SOBI-A to determine if a positive or negative relationship exists.

For SOBI-P Fit, all but two of the students who scored above average for their total sense of belonging also scored above average for Fit. The two who did not were within a point of the

average, so they also showed a strong sense of Fit. The SOBI-P Valued Involvement scores were more conclusive as all participants who scored at or above average for their SOBI-P Total score also scored at or above average on SOBI-P Valued Involvement. This is a positive result as it indicates that if a student feels valued and needed, and that they feel that they have qualifying characteristics, then they will have a strong sense of belonging.

An essential part of the SOBI-P are the antecedents that contribute to a sense of belonging. The SOBI-A measured three identified antecedents and assists with evaluating the respondent's motivation and ability to obtain a sense of belonging. The results showed more students showed a desire to develop a sense of belonging as two more scored at or above the average on the SOBI-A Total score than on the SOBI-P Total score. The first antecedent, Energy Involvement, measures the effort put in by the respondent towards their development. Seventy percent of the respondents scored at or above the average on this antecedent, suggesting positive motivation to be involved. The SOBI-A Potential and Desire for Meaningful Involvement antecedent also saw a significant majority of participants indicate a strong desire to be involved and engaged. The last antecedent, Potential for Shared or Complimentary Characteristics, followed the same trend as the others. A significant majority of the respondents felt they could contribute to the development of their peers. These three antecedent results support the SOBI-P findings by showing that students who possess the motivation, the desire, and feel like they can contribute to others have a higher sense of belonging.

Core Competencies and Noncognitive Variables

In addition to looking at the variables independently, the researcher wanted to see how the respondent scores fit into the Core Competencies of the COAD course. The four competencies are Academic Engagement, Campus Engagement, Personal Development, and

Student Learning. Each NCQ variable was grouped based on their characteristics to one of the four competencies.

For Academic Engagement, the variables were Prefers Long-Range Goals and Knowledge Acquired in a field. The results of these variables suggest this competency was not adequately addressed in the COAD class. This could be due to multiple factors. One factor could be the lack of understanding from a student perspective on what they wish to study. The NCQ does not adequately identify if the student understands their career. Another factor could be the educational experience and background of the student prior to starting college. If they are a first-generation student or lack familial understanding of the college process, this could skew the results. No matter what factor or factors that may have contributed to the responses, this competency appears not to have been met with this study group.

Campus Engagement is viewed within the COAD course as not just being engaged with student traditions or organizations. One of the goals of this competency is to develop a report with faculty and to seek out offices of academic or career support. This competency was aligned with the Availability of a Strong Support Person and Demonstrated Community Service variables. The respondents appear to have indicated an understanding of who to seek out if they need support. But whether that is someone on campus or within their friends and family circle is not clearly defined. The NCQ suggests many have someone outside of the campus community, but it does not identify if internal to the campus due to its design. As for demonstrated community service, this variable and competency pairing is tricky. The NCQ specifically asks respondents to identify engagement within high school or in their community. It could be said that first-year students may not understand or view the university as a community yet if they are still developing themselves. The COAD course did provide opportunities for first-year students

to be involved throughout the semester; however, these events were not measured within this study.

The competency that showed the most growth was Personal Development. This competency looked at areas such as identity exploration, college transition, appreciating differences, and social justice. This allowed the Positive Self-Concept or Confidence and Understands and Deals with Racism variables to be easily aligned with this competency. The Successful Leadership Experience variable was also categorized under this competency. The results of the study indicated many of the participants had a strong feeling of their character and that many were committed to improving their surroundings to prevent racism or prejudice. But it also shows there is room to improve student engagement within leadership roles at the institution. This competency was a strong focus within the COAD course, and the NCQ data show strong evidence of growth and the potential for growth within the first-semester for the participants.

The final competency was Student Learning. This competency could easily be classified as the number one goal of the COAD course. It encompassed study skills, time management, and academic support opportunities. At the root of this competency is student development, which pairs with the Realistic Self-Appraisal variable. This variable identifies if the student can recognize deficiencies within their development and whether they seek assistance to improve those deficiencies. It also helps to identify if the student recognizes a need to broaden his/her individuality.

One of the goals of this study was to determine if the competencies of a first-year seminar course would influence noncognitive skill development. Based on the data gathered, it could be suggested that these variables may have been influenced by related assignments designed to

address the specific core competencies. However, the data is inconclusive on some of the competencies identified within the COAD course studied.

Correlation of NCQ Variables and the SOBI

An analysis of both surveys was conducted based on the two constructs of the SOBI to evaluate the relationship of the noncognitive variables related to sense of belonging. The cumulative data of the both survey instruments were imported into SPSS and a bivariate correlation was conducted to identify the relationships based on significance of each variable. For the purposes of this analysis, only the properly scored variables (which includes coring of item No. 29) were used to determine the relationships.

The eight noncognitive variables were first compared to SOBI-P Fit. With seven variables showing a significant statistical relationship to SOBI-P Fit. The results indicate noncognitive variable development can play an important role for first-year students and their belief that they belong within their environment. The only variable that showed a negative statistical relationship, Availability of a Strong Support Person, could be developed by first-year students as they transition through college. One would reasonably expect that a first-year student may not have developed a strong support network after one semester. Otherwise, the relationship between noncognitive variables and fit is a positive one and is important to this study.

Valued Involvement also showed a positive statistical relationship with most of the noncognitive variables. This attribute, which measures the experience of feeling valued, needed, and accepted, also had a positive relationship with seven of the eight variables. These measured feelings and the corresponding variables are explainable for first-year students. During their first semester, first-year students are still exploring their surroundings and the relationships within them. The result of this correlation suggests that as students develop their noncognitive variables,

then a positive feeling of being valued and involved will develop as well. The statistically negative relationship variable, Availability of a Strong Support Person, is not surprising in the context of the targeted population. First-year students may not have the opportunities to interact with someone who could develop into a strong support person early in their first semester.

The results of the correlation analysis indicate a statistically positive relationship between the noncognitive variables and the psychological component of the sense of belonging. This relationship identifies noncognitive variables as a valuable component to improving how first-year students fit in and feel valued within the new environment of a college campus.

The other construct of the SOBI, the antecedents, was also evaluated to determine if a relationship exists between the noncognitive variables and the SOBI-A attributes. The attributes measured by the SOBI-A, Energy Involvement, Desire for Involvement, and Shared Characteristics, are the forerunners of sense of belonging (Hagerty, 2015). Each of these antecedents were compared to the noncognitive variables, with differing results.

The Energy for Involvement antecedent as defined by Hagerty (2015), or the amount of effort put in by an individual towards their own development, showed a very strong positive statistical relationship to the noncognitive variables. A positive relationship was determined to exist between all eight variables. This attribute was the only one to show a positive statistical relationship among each of the noncognitive variables. This is a strong indicator that noncognitive variables are extremely important to first-years students and their development.

The SOBI-A also measured the level of effort put in by the respondent to increase their engagement (Hagerty, 2015). This antecedent attribute also had primarily a strong relationship to the noncognitive variables with five of the variables identifying a positive direction. Of the statistically positive variables, the variables are ones rooted within individual beliefs. The

concern within this antecedent is that the variables which can be directly related to effort and involvement are the ones with statistically negative relationships. The data suggests that student engagement in leadership opportunities, community service, or understanding of a career are not important aspects of belonging. This would suggest that the sections of the COAD course focused on focused on campus engagement and involvement may not be as necessary as previously expected. However, the population size of this study makes it difficult to determine if this is an isolated result or a generalization.

The final antecedent, the Potential for Shared Characteristics, asks respondents to identify how they feel they might contribute to others around them (Hagerty, 2015). This antecedent was by far the least impacted by noncognitive variables. This is supported by only three of the properly scored variables having a positive statistical relationship. The other five variables all had negative relationships, meaning the noncognitive variables had no impact on this antecedent. This may appear concerning from a statistical perspective. However, when thinking about what the variable is set to measure, the focus is developing the personal characteristics within first-year students. This result is not completely unexpected when evaluating first-year students.

Limitations

One limitation of this study is the population size. This study only accounted for 30 students in COAD classes. With an incoming class of over 4,000 students, not every student is required to complete a COAD class. There are also a limited number of COAD courses available during the fall semester which hinders the ability to access more student participants. Upon approval to conduct the study, access to COAD classes and instructors was challenging. The course structure requires the instructors to complete specific core tasks and content. This left minimal opportunity to enter the classes to seek consent or to conduct the surveys.

Another limitation of the study was the lack of focus on student demographics. While this was an intentional omission by the researcher, focusing on student demographics could provide additional perspectives within the study. Some additional perspectives which could have been expanded upon within the study include gender breakdown by belonging or the impact of noncognitive variables by race and ethnicity. This study could also be expanded to compare first-generation students or students within Living and Learning Communities.

The structure of the COAD class is another limitation of the study. The primary focus of the class is to develop multiple cognitive skills within first-year students. There is some mention of a few noncognitive variables but not many. Additionally, the course syllabus and required assignments are more cognitive focused. Providing more focus on noncognitive skill development may assist with improving retention rates and the sense of belonging across campus.

Impact on Future Practices

The results of this study could facilitate positive change in student development for first-year students. While most of the focus for first-year students has been in the cognitive development arena, this study suggests that noncognitive variables have a place in the student development conversation. The study's limited scope allows for direct impact on future practices within the institutions COAD program.

The first impact that could be made is to apply a more intentional focus on noncognitive variables and the variables that represent them. Student fit, desire, and motivation are just as valuable to overall development based on the results of the study. Applying an intentional focus on noncognitive variables could provide an increase in student retention based on an increase in sense of belonging.

Sense of belonging may be positively impacted as well even though it is a built-in focus of the COAD course. However, a more advanced strategy of pairing the COAD competencies with noncognitive variables may increase the effectiveness of the course and improve the understanding of the core competencies.

Focusing on noncognitive variables as a companion to cognitive skills could assist the institution with developing students holistically. An intentional focus on noncognitive variables and evaluating their impact on the core competencies could provide a more active and involved student body. This, in turn, could improve student retention and overall value of educational and extracurricular opportunities provided by the institution.

Recommendations

The primary recommendation of this study is to recreate this study with a larger population to determine if there is a broader impact. A limitation mentioned earlier discusses the low number of participants studied. There are more than two COAD classes, ranging from many different class sizes. Expanded participation will assist with providing more definitive results of noncognitive skill development on the sense of belonging. During the instructor training sessions, participation to survey class populations should be requested. Some COADs are academically based, some focused on traditional first-year development, and there are some built within Living and Learning Communities. The expansion of this study is possible and could be used to determine similarities and differences between the types of first-year seminar courses.

Another recommendation would be to redefine the course syllabus, objectives, and competencies. The purpose of the COAD course is to assist with student development, but it does not consider enough focus on noncognitive development. The core competencies are extremely valuable and, as this study shows, pair very well with the noncognitive variables. A

course that breaks down the competencies and incorporates noncognitive skill development is feasible based on their overlapping nature. These skills would not take away from the course material but would serve as an enhancement to what is already in place.

An important recommendation involves both survey instruments. It is recommended that the SOBI be administered at the beginning of the semester. This would allow for pure, unaltered data results as students prepare their developmental journey. The timing of this study makes it difficult to determine if it was the COAD course or other outside experiences that impacted the sense of belonging. An early understanding of how students feel like they fit or are valued at the institution will assist in building the core competencies of the course. It will also help potentially develop a student-faculty relationship early enough for students who may be at risk. The SOBI should also be administered at the end of the semester as well to determine student growth.

It is also recommended to administer the NCQ early in the semester as well. Doing so will assist with establishing benchmarks for noncognitive development. It is strongly recommended that the instrument is explained and discussed thoroughly with all participants as well. This will help avoid scoring issues and provide more accurate results. The NCQ will also assist future studies to find potential correlations between students based on demographics. While demographics were not a focus of this study, an analysis by gender or by race and ethnicity could provide valuable insight on incoming students. As with the SOBI, the NCQ should also be administered at the end of the semester to determine developmental growth.

In addition to administering the surveys as a pretest and posttest, it is strongly recommended to incorporate the observations and interviews that were cut from the completed study. The observations could provide insight into the growth noncognitive variables throughout the semester. Participant interview would provide insight into the personal perspectives of study

participants and may assist with identifying other factors which could influence noncognitive variables. Combining observations and interviews with the results of the survey instruments would provide a greater understanding of whether the COAD course has an influence on noncognitive variables.

A final recommendation would be to determine an institutional definition or interpretation of sense of belonging. The SOBI utilizes five elements which can be incorporated into an institutional definition. Once established, this definition could be used as a mechanism to facilitate programming, student engagement, and institutional goals regarding student retention. This standard definition would allow all COAD instructors to follow a familiar path within their classrooms.

Conclusion

The purpose of this study was to determine if noncognitive skill development can influence the sense of belonging in first-year students. However, since the COAD course is not mandatory, there could be other factors that could influence noncognitive variables. During the execution of this study, the participants may have already engaged with a campus club, organization, or community activity. Involvement in these activities may have also influenced the noncognitive variables of the participants.

This study did confirm the researcher's assumption that pairing the NCQ and the SOBI would provide a good balance and assist with showing a relationship between noncognitive variables and sense of belonging. The results indicated that they could have a significant impact on the sense of belonging. The strong positive relationships between the NCQ variables and the SOBI attributes support this conclusion. The data from this population suggests that a focus on improving and developing noncognitive variables will also increase the level of sense of

belonging simultaneously. In addition to answering the primary research question, certain variables provided a consistently positive relationship to belonging. These variables could lead to restructuring of first-year development programs or seminars. The results of this study may also influence how the COAD courses at the institution being studied are taught in the future. Even while acknowledging the small population size, the results of this study show a promising connection between noncognitive skill development and the sense of belonging in first-year students.

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APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
www.ecu.edu/ORIC/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: James Coker
CC: Crystal Chambers
Date: 11/9/2018
Re: UMCIRB 18-001843
Noncognitive Skill Development in Student-Athletes

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 11/9/2018 to 11/8/2019. The research study is eligible for review under expedited category #7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

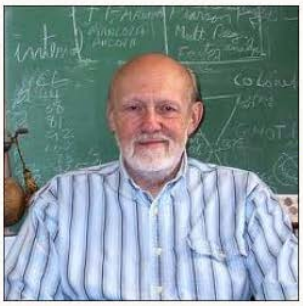
The approval includes the following items:

Name	Description
Coker - Informed-Consent-Document (5).doc	Consent Forms
James Coker Proposal 9 18 2018 revised.docx	Additional Items
Noncognitive Questionnaire	Surveys and Questionnaires
Sense of Belonging Instruments	Surveys and Questionnaires
Study Protocol	Study Protocol or Grant Application

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

APPENDIX B: WILLIAM E. SEDLACEK ACCESS TO RESOURCES

For several decades, going back to the 1960's, University of Maryland Professor, now Emeritus, William "Bill" Sedlacek has been sounding the call, an inspirational one, to better appreciate the significance of non cognitive dimensions of learning and success, and has been calling upon all of us who are educators to integrate assessment of these "non-cogs" into university, and now K-12, admissions evaluation and student progress evaluation.



Regular readers here know of my passion for transparency and open-source sharing– that as much as is possible, we should make freely available our tools, resources, practices, and learnings, and welcome others to take and use them freely. Sedlacek, who surely could have decided upon many moments in his career to seek to monetize his research and findings by creating a commercial, profit-making, noncognitive test, has instead taken the path of developing, posting, and sharing many different tools, welcoming schools and universities to take and adapt to his purposes.

As he explained, as a Professor he was successful, financially, enough– and "***why would I need more? That others are using my tools, adapting them to their needs, to improve their process, their educational program, and opportunities for others is reward enough.***"

There is accordingly an extraordinary abundance of tools and resources freely available at Sedlacek's site, here: http://williamsedlacek.info/

From that site, here is just a quick view of the particular instruments he is making available on his site, which could be of value to any and all educators seeking to expand their work in noncog assessment:

- Situational Attitude Scale(SAS)
  - This questionnaire measures how people think and feel about a number of social and personal incidents and situations.
- Non-Cognitive Questionnaire
- Non-Cognitive Admissions Variables
- Non-Cognitive Questionnaire Items Key
- Scoring key for Non-Cognitive Questionnaire

Retrieved from https://21k12blog.net/2013/01/21/sedlacek-on-assessing-non-cognitive-variables-from-the-usc-attributes-that-matter-conference/

APPENDIX C: NONCOGNITIVE QUESTIONNAIRE

Noncognitive Questionnaire

This questionnaire is mostly about your thoughts and feelings. While some demographic information is requested, there are no wrong or right answers. Please answer as honestly as you can. Also, please do not skip any items unless directed. **All information you provide will be kept confidential.**

Please fill in the blank or circle the appropriate answers.

29. Your ECU ID (Banner) #[1]:

2. Your sex is:

29. Male

2. Female

3. Your age is: years

29. Your father's occupation:

29. Your mother's occupation:

6. Your race is:

29. Black (African-American)

2. White (not of Hispanic origin)

29. Asian (Pacific Islander)

29. Hispanic (Latin American)

29. American Indian (Alaskan native)

6. Other

29. How much education do you expect to get during your lifetime?

29. College, but less than a bachelor's degree

2. B.A. or equivalent

[1] Original survey asked for Social Security Number. Question has been replaced to ask for ECU ID as it functions similarly to SSN for institutional purposes.

29. 1 or 2 years of graduate or professional study (Master's degree)

29. Doctoral degree such as M.D., Ph.D., etc.

29. Please list three goals that you have for yourself right now:

1.

2.

3.

29. About 50% of university students typically leave before receiving a degree. If this should happen to you, what would be the most likely cause?

29. Absolutely certain that I will obtain a degree

2. To accept a good job

29. To enter military service

29. It would cost more than my family could afford

29. Marriage

6. Disinterest in study

29. Lack of academic ability

29. Insufficient reading or study skills

29. Other

10. Please list three things that you are proud of having done:

1.

2.

3.

Please indicate the extent to which you agree or disagree with each of the following items. Respond to the statements below with your feelings at present or with your expectations of how things will be. Write in your answer to the left of each item.

1 – Strongly Agree 2 – Agree 3 – Neutral 4 – Disagree 5 – Strongly Disagree

11. The University should use its influence to improve social conditions in the State. _____

12. It should not be very hard to get a B (3.0) average at UMCP. _____

13. I get easily discouraged when I try to do something, and it doesn't work._____

14. I am sometimes looked up to by others. _____

15. If I run into problems concerning school, I have someone who would listen to me and help me. _____

16. There is no use in doing things for people, you only find that you get it in the neck in the long run. _____

17. In groups where I am comfortable, I am often looked to as leader. _____

18. I expect to have a harder time than most students at UMCP. _____

19. Once I start something, I finish it. _____

20. When I believe strongly in something, I act on it. _____

21. I am as skilled academically as the average applicant to UMCP. _____

22. I expect I will encounter racism at UMCP. _____

23. People can pretty easily change me even though I thought my mind was already made up on the subject. _____

24. My friends and relatives don't feel I should go to college._____

25. My family has always wanted me to go to college. _____

26. If course tutoring is made available on campus at no cost, I would attend regularly. _____

27. I want a chance to prove myself academically. _____

28. My high school grades don't really reflect what I can do._____

29. Please list offices held and/or groups belonged to in high school or in your community. ____

APPENDIX D: NONCOGNTIVE ADMISSIONS VARIABLES

COUNSELING CENTER
UNIVERSITY OF MARYLAND
COLLEGE PARK, MARYLAND 20742
NON-COGNITIVE ADMISSIONS VARIABLES
William E. Sedlacek

1. POSITIVE SELF-CONCEPT OR CONFIDENCE. Strong self-feeling, strength of character. Determination, independence.
2. REALISTIC SELF-APPRAISAL, especially academic. Recognizes and accepts any deficiencies and works hard at self-development. Recognizes need to broaden his/her individuality.
3. UNDERSTAND AND DEALS WITH RACISM. Realist based upon personal experience of racism. Is committed to fighting to improve existing system. Not submissive to existing wrongs, nor hostile to society, nor a "cop-out." Able to handle racist system. Asserts school or organization role to fight racism.
4. PREFERS LONG-RANGE GOALS TO SHORT-TERM OR IMMEDIATE NEEDS. Able to respond to deferred gratification.
5. AVAILABILITY OF STRONG SUPPORT PERSON to whom to turn in crises.
6. SUCCESSFUL LEADERSHIP EXPERIENCE in any area pertinent to his/her background (gang leader, church, sports, noneducational groups, etc.)
7. DEMONSTRATED COMMUNITY SERVICE. Has involvement in his/her cultural community.
8. KNOWLEDGE ACQUIRED IN A FIELD. Unusual and/or culturally related ways of obtaining information and demonstrating knowledge. Field itself may be non-traditional.
   8/95

APPENDIX E: SCORING KEY FOR NONCOGNITIVE QUESTIONNAIRE

Scoring Key for Noncognitive Questionnaire

QUESTIONNAIRE ITEM	VARIABLE NAME (NUMBER)
7	Use to score for Self-Concept (I) Option 1 = 1; 2 = 2; 3 = 3; 4 = 4; No response = 2
8	Options for Long Range Goals (IV) Each goal is coded according to this scheme: 1 = a vague and/or immediate, short-term goal (e.g., "to meet people," "to get a good schedule," "to gain self-confidence") 2 = a specific goal with a stated future orientation which could be accomplished during undergraduate study (e.g., "to join a sorority so I can meet more people," "to get a good schedule so I can get good grades in the fall," "to run for a student government office") 3 = a specific goal with a stated future orientation which would occur after undergraduate study (e.g., "to get a good schedule so I can get the classes I need for graduate school;" "to become president of a Fortune 500 company")
	B. Options for Knowledge Acquired in a Field (VIII) Each goal is coded according to this scheme: 1 = not at all academically or school related; vague or unclear (e.g., "to get married," "to do better," "to become a better person") 2 = school related, but not necessarily or primarily educationally oriented (e.g., "to join a fraternity," "to become student body president") 3 = directly related to education (e.g., "to get a 3.5 GPA," "to get to know my teachers") Find the mean for each dimension (e.g. Long Range Goals) and round to the nearest whole number.
9	Use to score for Self-Concept (I) and Self-Appraisal (II) Option 1 = 4; 2 through 9 = 2; No response = 2
10	Use to score for Self-Concept (I) Each accomplishment is coded according to this scheme: 1 = at least 75% of applicants to your school could have accomplished it (e.g., "graduated from high school," "held a part-time summer job") 2 = at least 50% of applicants to your school could have accomplished it (e.g., played on an intramural sports team," "was a member of a school club") 3 = only top 25% of applicants to your school could have accomplished it (e.g., "won an academic award," "was captain of football team") Find the mean code for this dimension and round to the nearest whole number.

For items 11 through 28, positive (+) items are scored as is. Negative (-) items are reversed, so that 1 = 5, 2 = 4, 3 = 3, 4 = 2, and 5 = 1. A shortcut is to subtract all negative item responses from 6.

QUESTIONNAIRE ITEM	DIRECTION	VARIABLE NAME (NUMBER)
11	-	Use to score for Racism (III
12	-	Use to score for Realistic Self-Appraisal (II)
13	+	Use to score for Long-Range Goals (IV)
14	-	Use to score for Leadership (VI)
15	-	Use to score for Availability of Strong Support (V)
16	+	Use to score for Community Service (VII)
17	-	Use to score for Leadership (VI)
18	+	Use to score for Racism (III)
19	-	Use to score for Long-Range Goals (IV)
20	-	Use to score for Positive Self-Concept (I)
21	-	Use to score for Realistic Self-Appraisal (II)
22	-	Use to score for Racism (III)
23	+	Use to score for Positive Self Concept (I)
24	+	Use to score for Availability of Strong Support (V)
25	-	Use to score for Availability of Strong Support (V)
26	-	Use to score for Racism (III)
27	-	Use to score for Racism (III)
28	-	Use to score for Positive Self Concept (I)
29	-	Use to score for Leadership (VI), Community Service (VII) and Knowledge Acquired in a Field (VIII). Each organization is given a code for A, B, and C below. Find the mean for each dimension (e.g. Leadership) and round to the nearest whole number.

A. Leadership (VI)

1 = ambiguous group or no clear reference to activity performed (e.g., "helped in school")

2 = indicates membership but no formal or implied leadership role; it has to be clear that it's a functioning group and, unless the criteria are met for a score of "3" as described below, all groups should be coded as "2"even if you, as the rater, are not familiar with the group (e.g., “Fashionettes," "was part of a group that worked on community service projects through my church")

3 = leadership was required to fulfill role in group (e.g., officer or implied initiator, organizer, or founder) or entrance into the group was dependent upon prior leadership (e.g., "organized a tutoring group for underprivileged children in my community," "student council")

B. Community Service Relatedness (VII)

1 = no community service performed by group, or vague or unclear in relation to community service (e.g., "basketball team").

2 = some community service involved but it is not the primary purpose of the group (e.g., "Scouts")

3 = group's main purpose is community service (e.g., "Big Brothers/Big Sisters")

C. Knowledge Acquired in a Field (VIII) (same coding criteria as used for item 8B.)

APPENDIX F: NONCOGNTIVE QUESTIONNAIRE WORKSHEET FOR SCORING

Noncognitive Questionnaire
Worksheet for Scoring

1. POSITIVE SELF-CONCEPT OR CONFIDENCE

   item7 + item9 + item10 + (6 - item2O) + item23 + (6 - item28)

2. REALISTIC SELF-APPRAISAL

   item9 + (6 - iteml2) + (6 - item2l)

3. UNDERSTANDS and DEALS with RACISM

   (6 - item11) + item18 + (6 - item22) + (6 - item26) + (6 - item27)

4. PREFERS LONG-RANGE GOALS to SHORT-TERM or IMMEDIATE NEEDS

   item8A + iteml3 + (6 - item19)

5. AVAILABILITY of a STRONG SUPPORT PERSON

   (6 - iteml5) + item24 + (6 - item25)

6. SUCCESSFUL LEADERSHIP EXPERIENCE

   (6 - iteml4) + (6 - iteml7) + item29A

7. DEMONSTRATED COMMUNITY SERVICE

   iteml6 + item29B

8. KNOWLEDGE ACQUIRED in a FIELD

   item8B + item29C

APPENDIX G: SENSE OF BELONGING INSTRUMENT –

PSYCHOLOGICAL EXPERIENCE

Instructions: Here are some statements with which you may or may not agree. Using the key listed below, circle the number that most closely reflects your feelings about each statement.

KEY: **1** = Strongly Agree **2** = Agree **3** = Disagree **4** = Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I often wonder if there is any place on earth where I really fit in.	**1**	**2**	**3**	**4**
2. I am just not sure if I fit in with my friends.	**1**	**2**	**3**	**4**
3. I would describe myself as a misfit in most social situations.	**1**	**2**	**3**	**4**
4. I generally feel that people accept me.	**1**	**2**	**3**	**4**
5. I feel like a piece of a jig-saw puzzle that doesn't fit into the puzzle.	**1**	**2**	**3**	**4**
6. I would like to make a difference to people or things around me, but I don't feel that what I have to offer is valued.	**1**	**2**	**3**	**4**
7. I feel like an outsider in most situations.	**1**	**2**	**3**	**4**
8. I am troubled by feeling like I have no place in this world.	**1**	**2**	**3**	**4**
9. I could disappear for days and it wouldn't matter to my family.	**1**	**2**	**3**	**4**
10. In general, I don't feel a part of the mainstream of society.	**1**	**2**	**3**	**4**
11. I feel like I observe life rather than participate in it.	**1**	**2**	**3**	**4**
12. If I died tomorrow, very few people would come to my funeral.	**1**	**2**	**3**	**4**
13. I feel like a square peg trying to fit into a round hole.	**1**	**2**	**3**	**4**
14. I don't feel that there is any place where I really fit in this world.	**1**	**2**	**3**	**4**
15. I am uncomfortable that my background and experiences are so different from those who are usually around me.	**1**	**2**	**3**	**4**
16. I could not see or call my friends for days and it wouldn't matter to them.	**1**	**2**	**3**	**4**
17. I feel left out of things.	**1**	**2**	**3**	**4**
18. I am not valued by or important to my friends.	**1**	**2**	**3**	**4**

APPENDIX H: SENSE OF BELONGING INSTRUMENT - ANTECDENTS

Instructions: Here are some statements with which you may or may not agree. Using the key listed below, circle the number that most closely reflects your feelings about each statement.

KEY: **1** = Strongly Agree **2** = Agree **3** = Disagree **4** = Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. It is important to me that I am valued or accepted by others.	**1**	**2**	**3**	**4**
2. In the past, I have felt valued and important to others.	**1**	**2**	**3**	**4**
3. It is important to me that I fit somewhere in this world.	**1**	**2**	**3**	**4**
4. I have qualities that can be important to others.	**1**	**2**	**3**	**4**
5. I am working on fitting in better with those around me.	**1**	**2**	**3**	**4**
6. I want to be a part of things going on around me.	**1**	**2**	**3**	**4**
7. It is important to me that my thoughts and opinions are valued.	**1**	**2**	**3**	**4**
8. Generally, other people recognize my strengths and good points.	**1**	**2**	**3**	**4**
9. I can make myself fit in anywhere.	**1**	**2**	**3**	**4**
10. All of my life, I have wanted to feel like I really belonged somewhere.	**1**	**2**	**3**	**4**
11. Fitting in with people around me matters a great deal.	**1**	**2**	**3**	**4**
12. I feel badly if others do not value or accept me.	**1**	**2**	**3**	**4**
13. Relationships take too much energy for me.	**1**	**2**	**3**	**4**
14. I just don't feel like getting involved with people.	**1**	**2**	**3**	**4**