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**NON-COGNITIVE SKILLS AND STUDENT PERCEPTION OF IMPORTANCE**

by

Laura Adriano

A Thesis

Submitted to the  
Department of Educational Services and Leadership  
College of Education  
In partial fulfillment of the requirement  
For the degree of  
Master of Arts in Higher Education  
At  
Rowan University  
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Thesis Chair: Raquel Wright-Mair, Ph.D.

Committee Members  
Rihab Saadeddine, Ed.D  
Dianna Dale, Ph.D.

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## **Dedication**

There are so many people that helped me along this journey. First, my husband Steven, who made countless dinners, and put up with too many weekends to count which involved me reading and staring at a computer. You are the bedrock from which everything I have done stands on. To my children, Aaron, Victoria, and Dylan, and my children by proxy, Heather, and Nick, who supported and encouraged me to never give up. You are my inspiration and my reason why. To Andi Goldner, my ride or die, you jump - I jump, partner in crime. To my parents who were not so quietly asking why I did not do this earlier ... I made it! I am blessed to have you all in my life, behind and beside me, as I walk along this twisted and rocky academic road.

To my “non-traditional” Grad School Divas, Brandi Blanton, and Nancy Demaris, we rock. To Dr. Dianna Dale who was the first professor to make me feel welcome in the classroom. To Barry Hendler, who talked me off the Qualtrics ledge and helped me design a survey that actually worked. To Dr. Rihab Saadeddine who mentored me through this mess and gave me the feedback to write a thesis to be proud of. I thank you all and I got the next round of margheritas!

Finally, Dr. Raquel Wright-Mair. I would not have made it across the finish line without you kicking and shoving me from behind. I have this degree because you not only believed in me but forced me to be a better scholar than I thought I could - or even wanted - to be. The hours you spend with us inside and outside the classroom are priceless. You are so vital to your students and your impact will be your legacy. As I stare down my next challenge ... yes – you told me so.

## Abstract

Laura Ann Adriano  
NON-COGNITIVE SKILLS AND STUDENT PERCEPTION OF IMPORTANCE  
2020-2021  
Raquel Wright-Mair, Ph.D.  
Master of Arts in Higher Education

The purpose of this study was to look at student perception of non-cognitive skills and if they put an importance on those skills as they relate to academic achievement. Surveys were distributed to students at a midsized university located in the northeast, who had earned senior status by earning 90+ credits. Additionally, interviews were also conducted to take a more in-depth look at themes discovered in the survey.

Findings show that students recognize the importance of non-cognitive skills, also referred to as soft skills. They felt that acquisition of those skills was critical to their academic success, while there were mixed results as to whether these same students felt that their institution was instrumental in developing these same skills.

With the retention and persistence of students is widely discussed in higher education, incorporating non-cognitive skills into the curriculum may be a budget friendly area of opportunity to bolster those numbers.

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## Chapter I

### Introduction

Academic success has long been linked to cognitive ability, intelligence, and intelligence quotient (IQ) score (Duckworth & Seligan, 2004). It has been a baseline belief that students with higher IQ scores would naturally achieve more academically. However, this did not account for why students of less cognitive ability frequently do better academically than their more intellectually gifted counterparts (Duckworth & Seligan, 2004; Robbins et al., 2004).

Non-cognitive skills are proficiencies in areas such as time-management, self-efficacy, self-discipline, personal goal setting, optimism, resilience, effort, positive outlook, and self-leadership. Studies have found that students with higher degrees of non-cognitive abilities are able to parlay those skills into achievement (Duckworth & Seligman, 2004; Heckman & Rubinstein, 2001). Non-cognitive skills including but not limited to time management, resilience, perseverance, self-efficacy, goal setting, dependability, and consistency, all had a positive relationship with academic achievement (Heckman & Rubinstein, 2001). It has also been found that outside intervention to enhance non-cognitive skills has been shown to sustain the positive effects many months, sometimes years, after the intervention (Kyllonen, 2013). Additionally, programs supporting social and emotional learning have been shown to have a substantial positive impact on student academic performance (Dymnicki et al., 2013).

The question remains as to whether students recognize the importance of non-cognitive skills or see any relationship with those skills and their academic performance. This is important because an increasing number of studies are illustrating that the mastery

of noncognitive skills is critical to the post-secondary success of students (Nagaoka, et al., 2013).

In this study, students who have achieved senior status (90+ academic credits) were surveyed to examine their perception of the importance of non-cognitive skills. I also explored if those same students recognized any association of having those skills with academic success. My two-part sequential explanatory study involved sending a survey to the senior students, followed by interviews to delve into important issues and themes discovered during the first phase of the study.

Self-efficacy is defined as the ability of a person to believe in themselves and their ability to achieve a specific goal (Carey & Forsyth, 2009). Self-discipline is defined as a person's ability to make themselves do something even though they do not want to (Self-discipline, 2021). The merits of self-efficacy and self-discipline has been the subject of multiple research studies (Bembenutty, 2009; Duckwork & Seligman, 2004; Nagaoko et. al., 2013; Napiersky & Stephen, 2018; Napiersky & Woods, 2018) all which have shown a direct correlation to academic success. While intelligence played a part in academic achievement, a larger role was played in academic success when non-cognitive skills were employed (Heckman &Rubinstein, 2001). By examining the perception of students' non-cognitive skills, greater awareness can be given to these skills, allowing students to focus on acquiring them in an effort to strengthen their overall academic success. If students understand the importance of non-cognitive skills, and that those skills can be learned, there may be more emphasis on acquiring and applying them broadly. Bembenutty (2009) noted in his 2009 report, that non-cognitive skills are more

malleable than cognitive skills. Meaning that non-cognitive skills can be learned and enhanced, with a direct positive effect on academic success (Bembenutty, 2009).

As non-cognitive skills are more malleable than intellectual ability (Kyllonen, 2013), programing targeting the acquisition and enhancement of those skills can lead to increases in persistence and degree completion. This lays the foundation for program design that provides for non-cognitive learning outcomes. Kyllonen's (2009) study also showed the effects of these interventions are not temporary. This bolsters an effective argument for efficient usage of scarce financial resources. The overall result would give students more tools in their quest towards academic, and ultimately career, success. This will benefit institutions in overall student retention, academic achievement, and student perseverance.

## Chapter II

### Literature Review

#### Introduction

Embarking on an undergraduate degree is a formidable task that requires a student to be not only academically prepared, but emotionally and psychologically focused as well (Layberry, 2021). Instead of having blocks of time carved out every day for specific subjects, plus regular study halls as in high school, college classes meet perhaps a little as once a week (Vaiana, 2020). Students are on their, own away from parents, most for the first time, without “supervision”. They are left to navigate feeding themselves, doing their own laundry, getting to class – regularly and on time, managing a social life, and all the other things required (Goldy-Brown, 2018). Suddenly these young adults find themselves with choices, obligations, and the need to juggle competing priorities. Other factors besides academics become important. Non-cognitive skills such as time management, and goal setting need to be incorporated into a student dynamic (Layberry, 2021).

The *student perception* of the importance of non-cognitive skills, and *if they* (students) feel there is any correlation to academic success, has not been extensively covered in the literature. An examination of scholarly articles shows multiple studies demonstrating the benefits of non-cognitive skills such as time-management, self-efficacy, and self-discipline (Bembenuity, 2009; Duckworth & Seligman, 2001; Dymnicki, Sambolt & Kidron, 2013; Harackiewicz & Priniski, 2018; Heckman & Rubinstein, 2001; Savitz-Romer, Rowan-Kenyon & Fancsaki, 2015; Wibrowski, Matthews & Kitsentas, 2017). However, literature focused specifically on how

undergraduate students view non-cognitive skills and academic success has not been extensively covered. As a more diverse demographic are now attending college, institutions of higher education need to find more ways to support those students outside of financially, especially when resources are limited (Zezar, 2020). If students understood that it was not just conventional IQ intelligence that made for a successful student, but teachable skills such as time management, goal setting, and critical thinking, amongst others, would that effect retention and graduation rates? The first step would be to establish whether students felt these skills were important.

### **IQ and Academic Success – A Well Understood Relationship**

Student accomplishment can have multiple meanings from the ability of a child to learn how to read, mastery of a second language, graduation from high school to the earning of a doctorate degree, and everything else in between. It has been long held that the main component of student accomplishment is related to the student's IQ score, or intelligence. The thought was that the students with the higher IQ would naturally go on to achieve great things both academically and professionally. Nevertheless, there remains some discussion as to why students with lower intelligence can experience greater success than those with greater intellect (Kyllonen, 2013).

There is a positive correlation between intelligence and IQ with students taking, and passing, the GED exam, but a negative correlation to motivation and experience (Heckman & Rubinstein, 2001). This is a result of students dropping out of school for reasons such as lack of motivation and self-discipline, but not intelligence. These same students go on to underperform professionally and the military (Heckman & Rubinstein, 2001). The study showed a relationship between intelligence which enabled a student to

pass the GED exam, but lack of non-cognitive skills such as perseverance, dependability and consistency impacted their ability to achieve later. The results of a quantitative study that examined GED test takers between 1975 – 1988, were consistent with the view that both cognitive and non-cognitive skills played important roles in determining graduation in high school and success beyond (Heckman & Rubinstein, 2001).

### **Non-Cognitive Skills and Academic Success – A Less Understood Relationship**

Non-cognitive skills are proficiencies in areas such as time-management, self-efficacy, self-discipline, personal goal setting, optimism, resilience, effort, positive outlook, and self-leadership. Commonly known as soft skills, these are abilities that are not necessarily taught in school but are critically important to student academic success and career accomplishment (Bembenutty, 2009; Duckworth & Seligman, 2004; Dymnicki, Sambolt, & Kidron, 2013).

A 2009 report by Hefer Bembenutty, published in “Psychological Reports”, puts forth self-efficacy as potentially the strongest positive predictor of academic achievement. Self-efficacy refers to a student’s belief in their ability to perform expected tasks. It differs from self-esteem in that it plays a role in increased persistence in seeking solutions, effort regulation and perseverance (Bembenutty, 2009). The ability of the student to self-regulate was also a crucial skill. Self-regulation was defined as the student’s ability to concentrate on academics, denying the urge to do something that would provide immediate gratification (such as going to a concert) to focus the distant goal of an exam or college degree. The additional component of delay of gratification, explained as the student’s willingness to postpone opportunities to satisfy *immediate* impulses in favor of *temporarily remote* academic goals, were learning strategies

employed by successful college students (Bembenutty, 2009). The results of his study showed that academic delay of gratification was significantly related to self-efficacy. Time management and a positive final course grade were also significantly associated with self-efficacy (Bembenutty, Academic delay of gratification, self-efficacy, and time management among academically unprepared college students, 2009). The findings mirrored prior studies in all but one area – academic delay of gratification was not statistically related to academic achievement. However, academic delay of gratification did have a significant and positive direct effect on time management which also had a direct correlation to academic achievement (Bembenutty, Academic delay of gratification, self-efficacy, and time management among academically unprepared college students, 2009).

Self-efficacy was further examined by Nagaoka (2013). They found that self-efficacy was grounded in a student's belief in their ability to succeed at any given task. The authors noted that students who believed in themselves were more likely to work hard, build competence, and exhibit behaviors associated with academic achievement (Nagaoka et al., 2013). They went further to say that post-secondary institutions needed to be ready to support students in attaining a degree both academically and non-cognitively. As students transitioned into college, there needed to be different levels of resources and supports to make the change successfully.

In their qualitative study, Napiersky and Stephen (2018) examined the potential benefits of engaging in strategies of self-goal setting, self-management of behavior and effort, and adopting a positive outlook for academic attainment. Goals that are specific and measurable, resulted in enhanced performance. They also served to direct behavior

towards maintaining effort and persistence, as well as prompted the development of a performance strategy (Napiersky & Woods, 2018). Research showed that job performance and academic achievement were strongly associated with the concept of psychological capital. Psychological capital was defined as a positive psychological state of development that included self-efficacy, optimism, resilience, hope, and persevering towards goals (Napiersky & Woods, 2018). Again, the themes of the student holding themselves accountable, working towards a long-term goal, and denying short-term gratification were highlighted. This study introduced the concept of self-leadership as it related to academic attainment. The quantitative study consisted of 150 students in a UK based business school, (101 women – 49 men). Five aspects of self-leadership were found to be significantly predictive of academic attainment and success: goal setting, self-regulating and self-directing, goal-directed behavior, motivational awareness, and optimism. Proactively taking steps to change or adjust behavior, to address less than satisfactory progress towards academic goals, had a positive effect on academic success (Napiersky & Woods, 2018). This shows potential to develop transferable related skills.

The concept of self-discipline is further explored in the 2004 University of Pennsylvania qualitative study by Angela Duckworth and Martin Seligman. Eighth-grade students were recruited from socioeconomically and ethnically diverse backgrounds and given questionnaires regarding self-discipline. One hundred and forty students participated in the first study and 164 students a second study; both studies specifically examined self-discipline. The first study used self-reported measures of self-discipline while the second examined self-reporting by utilizing a different questionnaire by adding an intelligence measuring tool (Duckworth & Seligman, 2004). The results were

consistent with prior studies which showed a positive direct correlation to self-discipline and academic achievement (Duckworth & Seligman, 2004). Highly self-disciplined students outperformed more impulsive students on every academic-performance variable, including grades, standardized test scores, and admission to a competitive high school. Self-discipline also predicted academic performance better than IQ. Further, it predicted which students would improve their grades whereas IQ did not. Students who were able to successfully choose between conflicting desires and impulses were able to have a substantially positive effect on academic performance (Duckworth & Seligman, 2004).

Kyllonen et al (2013) explained that personality and motivation should be assessed and developed to increase students' readiness for college. However, both were non-cognitive constructs and were not traditionally evaluated. There was evidence of a strong relationship between personality and related non-cognitive factors to successful academic and educational outcomes (Kyllonen, Soft skills for the workplace, 2013). Factors such as time management skills, commitment to college, academic discipline and self-efficacy had been found to directly relate to academic achievement. The authors discussed concept of the "Big 5" or the Five-Factor Model (FFM): openness, conscientiousness, neuroticism, extroversion, and agreeableness or attitudes. Referencing multiple studies, the authors showed how non-cognitive factors, as well as personality and motivational factors, directly correlated to academic achievement (Kyllonen, Soft skills for the workplace, 2013). As these indicators evolve and develop over time, multiple strategies should be implemented by the educational system to maximize student potential. This comprehensive and holistic approach would be very beneficial to students at almost every level of school, not simply those in higher education.

Additionally, it would provide several opportunities for intervention and redirection for lower performing students.

Self-awareness, self-management, social awareness, relationship skills, and responsible decision making were labeled as core competencies by Dymnick et al (2013) similarly to the “Big 5” (Kyllonen, 2013). The authors reviewed multiple studies from the Youth Risk Behavior Surveillance, the National Survey on Drug Use and Health, Mental Health Services Administration, and the National College Health Assessment. An implication of these findings were that skills that allowed students to regulate their emotions, resolve conflicts respectfully, and avoid engaging in risky behaviors should be valued and supported (Dymnick et al, 2013).

### **Why Non-Cognitive Skills Are Important**

Non-cognitive skills are important because they are skills that can be acquired and refined, instead of something a student is born with (Kyllonen, 2013).

A quantitative meta-analysis of multiple studies was done in 2004 by a group of authors published in the Psychological Bulletin. They examined the relationship between psychosocial and study skill factors, comparing them to college outcomes, by looking at 109 different studies (Robbins et al., 2004). The responses in the various studies were coded and organized into categories. The authors found several different non-cognitive attributes, reoccurring throughout the studies, that demonstrated to be more important in indicating academic achievement and success than IQ or GPA. Those traits included academic goals, achievement motivation, perceived social support, social involvement, and academic self-efficacy (Robbins et al., 2004). Their meta-analysis looked at two bodies of literature, educational and psychological, and found direct correlations between

psychological / study skill factors and academic success (Robbins et al., 2004). Study skills such as time management, utilization of resources, taking class notes and preparing for and taking examinations were critical to positive college performance including retention (Robbins et al., 2004).

Fully developed cognitive and non-cognitive skill sets are crucial to academic success as well as job performance according to Nagaoka et al. (2013). Behaviors such as perseverance, social skills, academic mindset, and learning strategies, as well as motivation and time management, are all connected and lead directly to academic success. The authors stated that it is incumbent on colleges and universities to provide programs that supported the development of both. Perseverance and academic behaviors, in combination with non-cognitive factors such as time management, social skills and learning strategies, are all interconnected, leading to strong academic performance (Nagaoka et al., 2013). Non-cognitive factors, described as sets of behaviors, skills, strategies, and attitudes, directly correlate to academic performance and persistence. Behaviors such as perseverance, social skills, academic mindset, and learning strategies, as well as motivation and time management, are all connected and lead to academic success. Nagaoka et al., outlined how these factors relate to one another, each being a key indicator of a student's ability to achieve academic success. The effective student is the one that integrated the above factors (Nagaoka et al., 2013).

Moore et al. (2015) further explored the non-academic attributes of self-regulation, agency and motivation, persistence and diligence, as well as executive functioning, and their direct positive correlation to relationships, workforce readiness, learning skills and the sense of belonging. The authors noted that it was not enough for a

student to have a degree or certificate to find professional accomplishment. The study showed that it was necessary to have various other character strengths such as diligence, self-control, tolerance and be open to new experiences (Moore, Lippman, & Ryberg, 2015). These non-academic skills were crucial to educational achievement (Moore, Lippman, & Ryberg, 2015). Well developed coping skills and social development had positive effects on student behaviors. It was found that those who were actively involved in volunteering, clubs, sport or religious activities, have a reduced chance of being involved in negative behaviors such as smoking, petty theft and crime and teenage pregnancy, and a higher chance of positive attributes such as higher grades, academic success and leadership roles (Moore et al., 2015). The need for a future national survey to assess these traits was reviewed. Data from the National Center for Educational Statistics (NCES) longitudinal surveys from 1988 to 2015 was analyzed to form their conclusions.

### **Effects of Targeted Intervention**

A targeted intervention is a formal set of steps of instruction that that are designed to help students in specific areas or to teach a certain set of skills. They are designed to address certain educational problems and focus on challenges faced by students (Harackiewicz & Priniski, 2018).

The Heckman and Rubinstein GED study (2000) discussed non-cognitive abilities being more malleable than IQ. The introduction of mentoring programs and stricter enforcement of discipline in schools positively influenced motivation and self-discipline, which in turn, had a positive effect on academic achievement.

The positive effects of direct intervention are further explored in the article, “Soft Skills for the Workplace” (Kyllonen, 2013). A review of multiple studies by the author

revealed that non-cognitive measures predicted outcomes at all levels of educational achievement, as well as a predictor of earnings and employment. The study, according to, according Kyllonen (2013) demonstrated that success had more to do with character skills such as perseverance, grit, curiosity, optimism, and self-control, all of which can be influenced in positive manners. A single targeted intervention can show positive effects months / years after being introduced (Kyllonen, 2013). In his 2013 presentation to the Association for Psychological Science, Roberts noted that interventions changed personality factors on average of a half a standard deviation and that change did not fade over as much as five years (Kyllonen, 2013).

Programs supporting social and emotional learning (SEL) have been shown to have a substantial positive impact on student academic performance (Dymnicki et al., 2013). The Five SEL Core Competencies, self-awareness, self-management, social awareness, relationship skills, and responsible decision making (Dymnicki et al., 2013) are skills that can be used to persist in the acquisition of a degree. Higher order skills, such as critical thinking and problem solving, are natural next steps and precursors to the development of employability skills and academic achievement. By providing students with the appropriate SEL environment, many learning barriers and associated risk factors could be addressed. SEL competencies helped students in the areas of communication, cooperation with team members, effectiveness as leaders, as well as self-advocators (Dymnicki et al., 2013).

### **Interdisciplinary Co-Operation**

Savitz-Romer et al. (2015) noted that faculty should move beyond teaching content and make an active effort to engage students to expand their interpersonal, social,

and learning skills. Students spend most of their time in the classroom, therefore it is faculty who have the most influence on students. A four-year program collegiate academic program should be holistic and integrated to prepare students for a professional career. The article delved into the importance of social, emotional, and affective (SEA) factors that were critical to both academic and professional success. The authors noted the need for the development of programs and practices to promote those skills, specifically in a classroom setting (Savitz-Romer et al., 2015). Institutions can ensure students' persistence and success by implementing a professional development program aimed at giving learning specialists knowledge of student development theory, and skills in coaching and counseling (Savitz-Romer et al., 2015). There is a disparity in what the program directors' thought was important regarding skill development and what institutional officers felt was important. While both groups ranked "understanding institutional / academic expectations" highest, program directors ranked self-direction, stress management, taking initiative and self-efficacy higher than their institutional officer counterparts. Universities prioritized skills and behavior that contributed to learning while program directors were looking towards the development of interpersonal and soft skills (Savitz-Romer et al., 2015). These objectives should not be mutually exclusive. While the qualitative study and data presented was primarily first-year focused, both goals could be reached simultaneously.

Self-awareness is a key SEA concept goal, but programs lack assessments to give students an opportunity to see where they are in that goal and how to improve. The article briefly covered the "My Wildcat Track" from University of Arizona, a program designed specifically to support students. This program supports students academically as well as

developmentally by interjecting learning specialists into the paths of students to teach the skills needed to be successful in school (Savitz-Romer et al., 2015). The article also discussed the Career Development Model of Charleston Southern University. This institution offered a four-year roadmap, including a one credit course on career planning and a campus-wide emphasis on critical skills. This student affairs – faculty partnership offered the student the most opportunity to achieve academic achievement. Faculty involvement was essential as students spent more time in the classroom than anywhere else on campus (Savitz-Romer et al., 2015).

Multiple studies have shown the importance of non-cognitive skills and their direct correlation to positive academic performance and persistence. There is also agreement on the need to be able to quantify and assess these skills. The disagreement is on whether there is a need for a national standardized test, or is a national test even feasible (Porter & Polikoff, 2012). Non-cognitive skills are also malleable and can be positively influenced through direct intervention while IQ remains static (Savitz-Romer et al., 2015). This answers the question as to why less gifted students who work hard do better than those who are intellectually superior (Heckman et al., 2001). The literature does not directly address whether students attending college view non-cognitive skills as important, or having any relationship to, academic success in higher education. Similarly, studies do not directly examine those students who are not pursuing a bachelors degree, or whether or not they are prepared to enter into the workforce as far as soft-skills are concerned. Antidotal evidence surrounding the need for the student to take remedial coursework or, in the case of those who do not enter into higher education, job stability, would answer that question (Heckman & Rubinstein, 2001). Keeping the focus on higher

education, it is critically importantance of non-cognitive skills be answered. Higher education is extraordinarily expensive. It is in a student's best interest to ensure they are provided with, and supported in, all skills necessary to be successful. It is incumbent on high schools to offer the proper basis for non-cognitive skill development, and take on some of the responsibility that has been passed onto colleges. To support the students attending college, higher educational institutions need to provide programming to support the development and growth of non-cognitive skills (Moore et al., 2015) with the direct benefit of increased academic success and retention (Bembenutty, Academic delay of gratification, self-efficacy, and time management among academically unprepared college students, 2009).

## **Chapter III**

### **Methodology**

#### **Purpose Statement**

The purpose of this sequential explanatory mixed methods approach was to examine the perceptions of undergraduate senior students towards non-cognitive skills and understand any importance as it relates to students' academic achievement. Multiple studies discuss the significance of non-cognitive skills (Bembenutty, 2009; Heckman & Rubinstein, 2001; Kyllonen, 2013; Napiersky & Stephen 2018). By surveying current college students, I delved into any perceived relationship between non-cognitive skills and academic accomplishment.

#### **Research Questions**

The three research questions guiding this study were:

1. What are the perceptions of undergraduate senior students toward non-cognitive skills and their importance in relationship to their education?
2. To what extent do the senior students feel non-cognitive skills contribute to academic performance?
3. What are the attitudes of senior students towards the support systems that could help them acquire these skills?

#### **Rationale for and Assumptions of a Mixed Methods Methodology**

Mixed methods research design is routinely used when a more detailed answer is sought to an issue (McMillan, 2012). The first step was to identify whether students understood what non-cognitive skills were and examine whether they felt they possessed them. This was achieved utilizing a survey. Second, I conducted interviews to discuss

the student understanding of non-cognitive skills and how they perceive the impact of those skills on academic success. By identifying key concepts through the quantitative study, in advance of qualitative study to further examine those key concepts, a richer understanding can be gained (McMillan, 2012).

This is important because the investment of resources made by a student, both financially and in time, to obtain an education past a high school diploma is substantial. Institutions of higher education should utilize every resource at their disposal to support students in their quest. Intentional non-cognitive skill intervention has been proven to be effective up to years after the initial intervention (Kyllonen, 2013). Additionally, regarding the positive mailability of non-cognitive skills versus the static IQ (Kyllonen, 2013), it would benefit the institution's retention and graduation rates to incorporate soft skills into the traditional academic classroom. Not everyone has a higher IQ, but everyone can be taught time management, critical and analytical thinking, good health and eating habits, as well as speaking and writing effectively, among others (Heckman & Rubinstein, 2000; Kyllonen, 20213). High intelligence is not necessarily a requirement of academic success, but a student of average intelligence, with basic knowledge and understanding of soft skills have been shown to be able to outperform those of a higher intellect (Duckworth and Seligman, 2004).

### **Context of Study**

The research was conducted at Rowan University, a medium sized university whose main campus is in Glassboro, New Jersey. Rowan was founded in 1923 as the Glassboro Normal School. Through a \$100 million-dollar transformative donation from Henry Rowan (1992), the university as grown from a small local state college to a

nationally recognized institution with a Carnegie classification of R2 (Doctorial University – high research activity) with a combined enrollment of just under 20,000 students (Rowan, 2019).

### **Participant Selection**

The targeted population were all undergraduate students who were enrolled at the university during spring 2021. The initial sample group consisted of all students who had 90+ academic credits and attained senior class status. A total of 8,441 emails were sent out from a list generated by Rowan’s Information Resources and Technology Department. The initial email went out on February 1, 2021, with two additional reminders. A total of 209 surveys were opened, 169 students reviewed the consent document, 131 students agreed to participate, and a total of 125 students completed the survey. Out of the 8,441 surveys sent out to students, 1.48% chose to participate.

Students were also asked if they would like to further contribute to the study by participating in focus groups. The second phase consisted of those who had self-identified in the first phase as wanting to further contribute via participation in a focus group. A total of 24 students self-identified as wanting to participate, with a total of three students who signed the consent form and made an appointment to be interviewed. Focus groups are designed to be open conversations guided by a moderator to encourage discussions and take a deeper dive into chosen topics (Herrman & Allen, 2018). To keep with a conversational style, my goal was to have three groups of up to six students, which I fell short of.

## **Data Collection**

The research study was a sequential explanatory research design and was conducted in two phases (McMillan, 2012). The first quantitative phase used an online cross-sectional survey for quantitative data collection. The second qualitative phase collected data through focus group interviews to allow for more meaningful conversation. Additionally, the grade point averages of participants were collected via self-reporting in the survey, along with standard demographic information. The survey was designed by myself, reviewed for clarity and content by my thesis committee members, and approved by Rowan University's Institutional Review Board (IRB 2020-215 – see Appendix A). Online consent forms were obtained, and the students were given the option to download a copy of the consent form to keep for their records.

### ***Online Cross-Sectional Survey***

An online survey was sent out to all students who had achieved senior level status as indicated by possessing 90+ academic credits. The survey was open for 14 days with reminders sent out to participants every five days. The survey was designed purposefully to address students' perceptions of non-cognitive skills, their perceived importance of those skills, and whether they feel Rowan University has been supportive in the acquisition of non-cognitive skills.

Students received an outreach email describing the survey and requesting their participation. The students were given a full description of what would be required for participation and what their time commitment would be. A link to the study was provided should they choose to move forward. They were informed that their participation was

entirely voluntary, and their responses would be kept confidential. Please refer to Appendix F for complete copy of recruitment email.

The quantitative data was collected through Qualtrics, a web-based survey. The survey was designed purposefully to address the perceptions of non-cognitive skills and the correlation with academic success, if any.

The first few questions of the survey questions collected standard demographic information such as ethnicity, age, and gender identification. The remaining questions focused on collecting data on students' perceptions and knowledge of non-cognitive skills. Students were also asked to identify non-cognitive skills, then ranked them in order of importance using a five level Likert Scale (1 – very important, 2 – important, 3 – no opinion, 4 – not important, 5 – not important at all). Using the same five level Likert Scale, the students were asked to give value to non-cognitive skills. Additionally, there were six questions which required the students to reflect on their time spent at in college, and whether they felt they had undergone personal growth, felt prepared for their chosen career, and supported by their university. There were also several open-ended questions for the participant to expand on answers if they so choose. Finally, the students were asked if they were interested in joining in a focus group to further discuss the topic.

### ***Interviews***

Focus groups are designed to promote a richer understanding of a research question due to the discussion and interaction between participants (McMillan, 2012). There were intended to be three focus groups, comprised of four to six students per group. The participants were to be given a summary of the research study, reminded that their participation was completely voluntary and that they could leave at any time. While

initially 24 students indicated that they would like to further participate in the study, only three followed through with completing the consent form, and signed up for a focus group time. As a result, instead of focus groups, I conducted interviews using the original intended questions.

I conducted all the interviews via Zoom to respect the restrictions of the current COVID-19 pandemic. At the beginning of the interview, I asked participants permission to be audio recorded then explained that conversations would be transcribed. The transcriptions, along with handwritten notes, were coded and organized by categories, to be referred to during data analysis (McMillan, 2012). I designed my questions on the themes that were revealed by reviewing the survey answers to probe the common responses more deeply (Creswell, Hanson, Plano Clark, & Morales, 2007).

### **Data Analysis**

To analyze the quantitative data collected from the survey, survey items were summarized, and descriptive statistics were used to examine the data regarding the research questions. Demographic characteristics were also collected and summarized for the purpose of describing the participants.

The interviews were transcribed and coded to identify emerging themes and put into categories. Answers were given a value and grouped together to identify different ideas and concepts.

### **Limitations**

There were several limitations of this study. Primarily, the study took place during the 2021-2022 COVID-19 pandemic. During this time, there was limited ability for people to interact in person to adhere to social distancing protocols. Most, if not all,

academic classes took place virtually via videoconferences on online platform such as Zoom, WebEx, or Google Meetup. As such, students spent most of the time in front of their computers. A phenomenon known as “Zoom fatigue” (Bullock et al., 2021). Students are tired and perhaps asking them to voluntarily participate in one more Zoom meeting was too much.

Additionally, while a focus group format was planned for, and enough students indicated they would like to participate, only three students followed through. The planned focus group evolved into an interview format with the three students, but still used the planned questions. Instead of having an organic conversation amongst a group of students where comments can spur other comments, the interview format was more like a question – answer session where the right questions needed to be posed in order to elicit thoughtful responses.

### **Ethical Considerations**

In compliance with IRB guidelines, students were fully informed about the risks involved in participating in the study and explained that their involvement was voluntary. Informed consent was received from each participant and contributors were fully apprised of the study and how the data will be used.

## Chapter IV

### Findings

The purpose of this study was to gain an understanding of how students perceive non-cognitive skills and their importance as they relate to academic achievement. The first step was to identify whether students understood what non-cognitive skills are and if they felt they possessed them. This was achieved through the implantation of a survey. This chapter includes a profile of the sample population, and an analysis of the data.

#### Profile of the Sample

The individuals in this study were students who achieved senior status by having earned 90+ academic credits, registered as a student either full or part time. A list of 8,441 emails was generated by the Information Resources and Technology Department, requesting their participation in a

Of those who participated, 18.6% were between 18-20 years of age, and 67% were between 21-24 years of age. A total of 46 students identified as male, 77 students identified as female, while one identified as non-binary and one as trans-male. Most students identified as Caucasian / White (71%), 8.7% as Latino / Latina, and 5.8% as Black / African American. This roughly follows the student population diversity as reported by this university in 2018, the most recent date that this data has been made public (Student Right to Know, 2018). The students reported that 86.4% (108) were taking classes full time (12 credits or more) while 13.6% (17) were taking 11 credits or less.

The College of Science and Mathematics had the largest representation of 27.8% (40 students), followed by the College of Education (16% - 23 students), College of

Business and the College of Humanities and Social Sciences both shared 12.5% (18 students each) and the College of Communication and Creative Arts had 11.1% (16 students).

Of the grade point averages (GPA) that were self-reported (on a 4.0 scale), none were below a 2.0 with 39 students reporting a 4.0, 31 students reporting a 3.5, and 28 students reporting a 3.75. Only six students reported a GPA between 2.0 and 2.75. While no students self-reported a GPA below a 2.0, this stands to reason as a student needs a 2.0 GPA or higher to graduate. Additionally, students lose federal funding with a GPA below that of a 2.0.

### **Soft Skills Ranking Overall**

The first question was “Thinking about skills that impact your learning and college experience, which of the following – if any- did you learn plays a role in academic development?” The students were asked to rank a total of 13 soft skills on a five-point Likert Scale from “Very Important” down to “Not Very Important” with a total of 129 responses. Please refer to table 4.1 for a ranking of skills that students listed as “Very Important”, in order of importance.

**Table 1**

*Overall Rankings of Soft Skills*

<b>Skill</b>	<b>Number of students reporting as <i>Very Important</i> out of 129 total responses</b>	
Time Management	87.40%	111
Self-efficacy	60.00%	75
Perseverance / Grit	58.27%	74
Speaking and writing effectively	55.81%	72
Critical Thinking Skills	54.76%	69
Self-control	54.40%	68
Analytical Thinking Skills	48.80%	61
Understanding of other countries or cultures	34.40%	43
Social Skills	34.13%	43
Good health and eating habits	33.86%	43
Leadership Skills	28.57%	36
Delay of Gratification	18.55%	23
Community Service	15.08%	19

As noted in the above table, clearly time management was the single skill most valued by students, followed by self-efficacy and perseverance. Of the students polled, 98.5% of those who identified as Black / African American, 99% of those who identified as White, and 100% of those who identified as White and Asian felt that time management was either Important or Very Important.

**Extent of Agreement**

This section of the survey focused on how strongly the student agreed with a series of questions:

- During my undergraduate experience, I grew and developed as a person.
- During my undergraduate experience, I discovered new things about myself.
- During my undergraduate experience, I achieved more than I thought I could.
- During my undergraduate experience, I found that there was more to being a good student than memorization.

- I feel that Rowan University actively assisted me in becoming a better student.
- I feel that Rowan University fully prepared me to participate in my chosen field.

The choices were as follows:

- Strongly Agree
- Somewhat Agree
- Neither Agree nor Disagree
- Somewhat Disagree
- Strongly Disagree

A total of 125 students answered the questions. Eighty-three strongly agreed that they both grew and developed as a person while in college. The same number also strongly agreed that they discovered new things about themselves. One hundred and eight students either agreed or strongly agreed that there was more to being a good student than memorization, while zero strongly disagreed. This is important to note as it speaks directly to the importance of soft skills.

While 74 students either agreed or strongly agreed to the question “I feel that my Rowan University actively assisted me in becoming a better student”, 51 felt otherwise. However, 100 students felt that they achieved more than they thought they could, attesting to the significance of “perseverance / grit”. If Rowan University did not assist the student in becoming a better student, than it came from within the student. It was the *student’s* determination to succeed that pushed them to that result.

The answer to “I feel that Rowan University fully prepared me to participate in my chosen field” was somewhat evenly split across the five possible responses. Thirty-one students strongly agreed, 18 agreed, 18 neither agreed or disagreed, 18 somewhat disagreed, and finally 10 strongly disagreed. This is concerning as the primary purpose of a college education is to prepare a student for a career. If there is no clear consensus on

whether Rowan has been successful in this area, then this is an obvious area of opportunity.

A similar result is found in the answers to “I feel that Rowan University actively assisted me in becoming a better student”. Thirty-two students strongly agreed, 32 students agreed. However, 32 students neither agreed or disagreed, 13 somewhat disagreed and six strongly disagreed. Again, if there is no clear consensus, this another area of opportunity for the university.

The cost of a college education is high, and steadily rising. As such, students should be adequately supported by their institution for success in their desired field of study. It is critical that students feel fully supported and developed in all aspects of their academic career, anything less is simply glorified book learning.

### **Short Response Questions**

This section of the survey gave the students an opportunity to expand on thoughts brought up on the initial assessment questions.

#### **Question 1**

Thinking about your time spent as an undergraduate, what is the one thing you wish you know as a freshman that would have helped you academically?

***Social Skills.*** When reviewing and coding these responses, social skills, which ranked relatively low in the overall ranking (34% of those who responded ranked it as “Very Important”), was repeatedly mentioned. The assertion “I wish I got more involved” was most prevalent, followed by statements focused on the importance of making friends and developing a support system. Students recognized the significance of getting involved in extracurricular organizations, study groups, and class discussions.

Networking, and making friends, was frequently mentioned both separately and together, as essential to doing well in class, when students had to work collaboratively and / or gather in study groups.

***Good Health and Eating Habits.*** Several students cited the importance of Mental Health to their general well-being. While this was not a specific category in the survey, it does fall under “Good Health”. Overall, Good Health ranked 10<sup>th</sup> in importance, yet many students referred to the value of “knowing your limits”, not “putting too much on my plate”, and “be gentler with yourself”. Self-induced academic stress, seeking out support, and striving for balance, were all mentioned along with the need to be mindful of mental health.

***Self-Awareness.*** While the term “Self-awareness” was not used specifically, students acknowledged the need to be proactive when seeking help whether it was academically or personally. One student stated that you should “get to know yourself and how you learn, and college will be much easier”. Many students stated that there were plenty of resources available, but it was up to the individual student to take advantage of those resources. Students recognized the importance of advocating for themselves, seeking out help academically, being open and honest when a problem is encountered, and taking advantage of all the resources college had to offer.

***Time Management.*** Interwoven through almost every comment was the need to responsibly manage time. Regardless of how the student phrased it, whether it was “breaking out of procrastination”, or “be extra proactive when it comes to group projects”, or “don’t cram”, they spoke with one voice. To be successful academically, a student needed to be organized and proactive, prepared for class, and find balance

between work, school, and life. The necessity of managing your time effectively was of paramount importance and it was clear why it was ranked first.

## **Question 2**

Again, thinking about your time spent as an undergraduate, where could Rowan University have offered more support to help you be more successful academically?

When reviewing the answers for this question, the most common theme was the need for advising, whether it was career or academic, which are not soft skills but could be considered self-efficacy. Student recognized the need for quality academic advising and repeatedly sought it out. This demonstrated a strong sense of self-awareness on the part of the students. This also reveals a high level of critical thinking which 98% of the students polled felt was either Important or Very Important. Students acknowledged the need for, and the value of, a good academic advisor. One student credited their academic advisor with getting them back on track after their GPA fell below a 2.5. Numerous students said that each college should have their own dedicated academic advisors to help with course selection and navigating which free electives to take to enhance their major courses.

Again, while strictly speaking, advising is not considered a “soft skill”, recognizing the need for competent career and academic advising would fall under the “self-efficacy” category. Students want to make informed decisions regarding their education and chosen career path. They spoke about the need for career guidance and classes that “mock working in your career”, as well as real discussions on what opportunities are available for students of specific majors, as well as assistance in getting valuable internships. Responses frequently mentioned the need for consistent, quality,

academic advising, and career guidance. As the purpose of getting an education is to successfully obtain a position in the student's chosen field, having a strong academic and career advising services available would only benefit the student.

Another theme that came up repeatedly was the need for consistent, and competent, academic and career advising. While advising was not specifically mentioned in any of the questions on the survey, when the students were given the opportunity to express their thoughts, many took the opportunity to speak on this. While not clearly categorized, recognizing the need for help clearly falls under self-efficacy and perseverance.

***Good Health and Eating Habits.*** Again, the issue of mental health was interwoven in these responses. Students actively sought mental health services to deal with the stress and anxiety of not only their academic course load, but to deal with the uncertainty presented by the COVID-19 pandemic. This intentionality also speaks to self-efficacy as well as self-awareness of limitations. Students recognize the importance of staying healthy so that they can effectively tackle their academic learning.

***Community Service and Understanding Other Cultures.*** Surprisingly, at a time of heightened awareness of those who are not as privileged, community service ranked last in importance. This view was not shared across ethnic identities. Overall, those who identified as Black / African American ranked Community Service as 4<sup>th</sup> overall, with 75% reporting that it was Important / Very Important. Those who identified as white / Caucasian ranked it 12<sup>th</sup> with 13% ranking it as Very Important and 26% as Important. The Latino / Latina students reported 0% as Very Important and 42% as Important.

Further, while “Understanding of Other Countries and Cultures” ranked low overall, students of varying ethnicities did not agree on its placement. Of the students who identified as Black / African American, 63% said it was Very Important, and 25% Important. Forty-two percent of Latino / Latina students said that understanding other countries or cultures was Very Important and 0% said it was Important. Most of the students, 58% ranked it Not Important, Not Very Important, or Neither Important nor Unimportant. Of the White / Caucasian identifying students, it was evenly split (29%) felt it was Very Important or Important. Forty-three percent felt that it was Not Important, Not Very Important, or Neither Important nor Unimportant.

I find this significant for several reasons. First, empathy is an important soft skill. In an increasingly diverse world, it is critical that people recognize and respect others. Additionally, it is essential that those with more privilege “give back to” or help those with less. At a time of increasing awareness of the inequities that exist in the current social and economic paradigm, I assumed that many with more privileged identities would have recognized the significance of giving back. However, the wording of the question, relating the skill to academic success, could be misleading. Perhaps it is not considered a “skill” by students but an action. The survey was asking about skills students felt were important, not actions taken that contributed to character development.

### **Analysis of the Interview Data**

Three research questions guided the student interviews. As initially stated, these interviews were intended to be focus groups. The original format called for three focus groups of four to six students each. Through the survey, 24 students indicated their interest but only three followed through to sign up. Students were sent an email

acknowledging their interest, with a link to sign an online consent to be interviewed form. Once completed, the students were then sent the link to sign up for a preferred date and time for a focus group. There were two additional reminder emails sent when initial participation did not meet expectations. Regardless of the additional outreach, only a total of three students followed through from expressing interest to participation. Two students participated in the first discussion, one in the second. Each interview was grounded in the following interview questions.

### ***Research Questions***

1. When you think of non-cognitive, or soft skills, what comes to mind?
2. What impact do you think those skills have on your academic performance?
3. Do you think it is important that these skills are taught alongside traditional academic subjects?

If so, how do you think Rowan University could better support learning / acquiring these skills?

Pseudonyms were chosen for purposes of this reporting to ensure participant confidentiality. The first pair of students interviewed were both engineering majors. One student identified as a female, who I will refer to as Mary. The other student identified as male and will be referred to as John. Both students recognized that communication, organization, and time management played key roles in navigating their engineering curriculum. Much of the work is done collaboratively and designed to mimic real world experiences. Communication and organization are critical to a success group project and presentation. Mary reiterated that in a tech heavy curriculum, time management is essential to keep from being overwhelmed. She credited the writing components, contained within the engineering clinics, with building essential communication skills.

John supported this and went further by stating that the presentations required strengthen public speaking skills, which ranked second in importance in the initial survey.

When asked what importance did each give to soft skills, Mary answered that:

... soft skills are really important. I'm a big advocate for that as a woman in engineering ... I've just kind of taken to trying to more of an advocate getting my voice out there ... I am further developing soft skills, on my own ...

John supported this and stated that – “people just have to do it to learn how to do it”.

Each recognized the importance of developing a strong set of soft skills to be successful, not only in college, but in the workplace.

Mary went further to say:

... with engineers now it's so vital that you have soft skills as well [as technical knowledge] because oftentimes engineers are so technically minded that they can't actually communicate with people ... we need to have more training, or at least encouragement, in that area of soft skills ... to better prepare people for the real world and everything that you're going to encounter throughout the rest of your life ...

The final interview was with Jane, a communications major, who stressed the importance of time management and organization, in keeping with the theme of the initial survey.

Jane stated how important it was to plan out schoolwork.

... I'm not going to say don't procrastinate, but I think things just turn out better when you spend more time and maybe prep because you have more time to think about it, and like ask questions and follow ups and you're more prepared when you take your time versus when you're rushed...

As a member of Leadership Rowan, a progressive extracurricular program that builds leadership skills, Jane takes advantage of the opportunities offered on ProfLink, Rowan's online platform for groups and organizations.

Jane thought it was important to introduce soft skills early in a student's academic career, maybe incorporate it into orientation. As a transfer student, she did not take part in the full orientation at Rowan. She credits Leadership Rowan with teaching her these critical skills. She strongly felt that by introducing these skills as early as possible in a student's academic career so that those skills would become completely incorporated into a students' college journey.

## Chapter V

### Summary, Discussion, Conclusions, and Recommendations

This final chapter summarizes the study and make suggestions for further research and practice recommendations. This study revealed that students very aware of the need for non-cognitive skills and the direct correlation to not only academic success but as they transition into the workplace.

#### Summary of Study

This thesis explored the student perception of non-cognitive skills and any relevance to academic accomplishment. The study also sought to delve into whether students recognized the importance of non-cognitive skills or saw any correlation to their academic performance. Students who had achieved senior status (90+ academic credits) were surveyed to see if there was any acknowledgment of the significance of specific non-cognitive skills. I also investigated to see if students made any connection to possessing those skills and academic success. My two-part sequential explanatory study involved sending a survey to the senior students, followed by interviews to delve into important issues and themes discovered during the first phase.

#### Discussion of the Findings

##### *Survey*

The students who responded to the survey spoke acknowledged that there was more to academic achievement than just having good study habits. Time management skills ranked first regardless of ethnicity, gender, or GPA. The ability to juggle multiple, and competing, priorities, while maintaining balance between school and life was recognized as key to academic success. Students recognized the need for a planner or

some type of system to manage dates, deadlines, and work schedules. Starting projects early, setting aside specific time to study, and being proactive in group work were all mentioned as important to overall achievement.

Speaking and writing effectively, self-efficacy, and perseverance also emerged as significant, while delay of gratification and community service ranked lower in importance. Students stressed the value of seeking out help and taking advantage of available resources. They agreed that overall, their college provided the resources necessary for students to be successful but ultimately it was up to the student to seek them out and take advantage of them.

While advising was not specifically mentioned in any of the questions on the survey, when the students were given the opportunity to express their thoughts, many took the opportunity to speak on this. While not clearly categorized, recognizing the need for help clearly falls under self-efficacy and perseverance.

Students also expressed the need to be aware of their mental health. Specifically, the category was “Good Health and Eating Habits” and while it did not expressly include mental health, it did not exclude it either. Students referred to the need to seek support to help manage anxiety and which was crucial to persisting in their degree. There is a direct correlation to this and time management. Being mindful of these controllable variables allows the student to approach their studies intentionally and in a manner that will help mitigate the feeling of events being out of their control.

Students also expressed the need for real world career experience and training to be part of the curriculum, again demonstrating student acknowledgement that there is

more to college than traditional book learning. It was important to the students that they were fully informed about their major choice and prepared for a career beyond college.

Overall, students recognized that there was more to college than academic performance. Students acknowledged that certain non-cognitive skills were crucial to their success. Most felt that Rowan University provided the support needed for a student to persist in their degree and that it was up to the students to take advantage of those resources.

**Interview Question One.** When you think of non-cognitive, or soft skills, what comes to mind?

The students asked all responded that time management, social skills, communication, organization, and public speaking topped the list of soft skills they thought of first.

**Interview Question Two.** What impact do you think those skills have on your academic performance?

There were varied responses to this, but all spoke on the importance of time management to cope with competing priorities. The two students who were engineering majors said that without this, they would not be able to successfully manage competing priorities. Additionally, they stressed how important communication was especially with the amount of group projects and presentations required of the major.

The third student, a communications major, also spoke on the need for organization and time management. She said that it was important to take a moment and plan your time out so that a student can get a feel for what needs to be done and when, while still allowing for unexpected issues.

**Interview Question Three.** Do you think it is important that these skills are taught alongside traditional academic subjects? If so, how do you think Rowan University could better support learning / acquiring these skills?

The students interviewed agreed that they were provided the resources necessary to be successful, but it was up to the student to take advantage of them. Several classes, including engineering clinics, taught these skills alongside traditional academics by intentionally put students into situations where they are required to develop non-cognitive skills such as planning, communication, public speaking, and writing skills. Making sure those skills were incorporated into the college experience early in the freshmen year, would be most beneficial.

### **Conclusions**

Students are very aware of the investment of time and resources which go into getting a four-year degree. They recognize that there is more to achieving a bachelor's degree than pure academics. Because of the fast-paced nature of the classes, the number of projects and group work, other skills needed to be utilized in addition to traditional academic ability. Higher Education needs to expand on this and embed these non-cognitive skills in general academic preparation. These skills are easily transferable into the workplace and, in an environment where many programs mirror another, could readily distinguish one from another.

### **Recommendations for Practice**

Based on the findings of this study, the current and ongoing research on the importance of non-cognitive skills, I make the following recommendations for practice.

1. It would be beneficial to students to incorporate soft skills from the very first class taken freshmen year. As students learn to incorporate non-cognitive skills into their academic development, they may find their pursuit of a bachelor's degree more manageable and achievable.
2. Non-cognitive skills are also valued outside academia (Kyllonen, 2013). The same traits that can help students achieve a degree can also be used in a professional setting. In today's competitive environment, it will be these enriching details that will set graduates apart.
3. By integrating soft skills into the curriculum, they become part of a student's baseline. As a student moves through their college career, time management, self-efficacy, and other non-cognitive skills will become second nature allowing students to pursue their degree more confidently, thereby increasing retention. Additionally, higher retention rates lead to higher graduation rates with a positive correlation to successful alumni, which in-turn could potentially lead to stronger alumni support, donations, and over-all positive brand perception. People will want to attend a university that develops their students beyond the classroom.
4. Integration of non-cognitive skills is a curriculum improvement with zero capital outlay. In the increasing tight fiscal atmosphere surround funding higher education, it is important that institutions think outside of academics to strengthen their brand and make their university more appealing to potential students. In return, successful alumni will want to give back to the school that made them financially successful.

5. It is imperative that students feel as if their institution actively supported them in becoming stronger students, more prepared for their fields of study. With the cost of a bachelor's degree out of the reach of many people, and the necessity of a degree rising higher than the cost, students must be able to state with assurance that they were both prepared and supported.
6. Existing research indicates that purposeful soft-skill intervention and non-cognitive skills have far reaching effects well after the initial program of study in college (Kyllonen, 2013). This lays the foundation for designing programming that provide for non-cognitive learning outcomes. As the effects are not temporary, this bolsters the argument to have these skills in the curriculum and an effective usage of scarce financial resources. The overall result would give students more tools in their quest towards academic success. Non-cognitive skills can be learned and enhanced, with a direct positive effect on academic success (Bembenutty, 2009).

### **Recommendations for Further Research**

Based on the findings of this research, the following research recommendations are presented.

1. A broader based, multiyear study should be conducted to sample students as they move through their collegiate career to study how their views of non-cognitive skills change and develop. This would involve following the same students instead of a general sampling.
2. The research conducted to this point has supported the significance and value of non-cognitive skills in both academia and beyond. Should these skills be

introduced more formally into the curriculum in a comprehensive manner, retention and graduation rates could be positively impacted, especially in first year and marginalized student populations.

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## Appendix A

### Institutional Review Board Approval

Date: 3-18-2021

IRB #: PRO-2020-215

Title: A Mixed Methods Study Examining Student Perception of Non-Cognitive Skills and Academic Performance

Creation Date: 12-7-2020

End Date: 1-18-2022

Status: **Approved**

Principal Investigator: Raquel Wright-Mair

Review Board: Glassboro/CMSRU

Sponsor:

#### Study History

Submission Type	Initial	Review Type	Expedited	Decision	<b>Approved</b>
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#### Key Study Contacts

Member	Raquel Wright-Mair	Role	Principal Investigator	Contact	wrightmair@rowan.edu
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Member	Laura Ann Adriano	Role	Primary Contact	Contact	adriano@rowan.edu
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## Appendix B

### Informed Consent

#### KEY INFORMATION AND ADULT CONSENT TO TAKE PART IN A RESEARCH STUDY

**TITLE OF STUDY:** A Mixed Methods Study Examining Student Perception of Non-Cognitive Skills and Academic Performance

**Principal Investigator:** Laura Adriano

You are being asked to take part in a research study. This consent form is part of an informed consent process for a research study and it will provide key information that will help you decide whether you wish to volunteer for this research study.

Please carefully read the key information provided in questions 1-10 below. The purpose behind those questions are to provide clear key information about the purpose of the study, study specific information about what will happen in the course of the study, what are the anticipated risks and benefits, and what alternatives are available to you if you do not wish to participate in this research study.

The study team will explain the study to you and they will answer any questions you might have before volunteering to take part in this study. It is important that you take your time to make your decision. You may take this consent form with you to ask a family member or anyone else before agreeing to participate in the study.

If you have questions at any time during the research study, you should feel free to ask the study team and should expect to be given answers that you completely understand.

After all of your questions have been answered, if you still wish to take part in the study, you will be asked to sign this informed consent form.

You are not giving up any of your legal rights by volunteering for this research study or by signing this consent form.

The Principal Investigator, Laura Adriano, will also be asked to sign this informed consent.

1. **Who is the study sponsor?** There is no study sponsor. This study is being conducted as part of a masters thesis requirement
2. **Why is this study being done (purpose of the study)?**  
This student is being conducted as part of a master's thesis requirement.
3. **Who may participate in this study? And who may not?**  
Students currently enrolled in college who are senior status by credit hours as of January 1, 2021, may participate in this study. No other students are eligible.  
  
"Participation in this study is voluntary, refusal to participate will involve no penalty or loss of benefits you are entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled to."
4. **Why have you been asked to take part in this study?**  
You have been asked to participate in this study because you have the college experience necessary to provide the feedback required for this survey.
5. **What will you be asked to do or what this study involves if you take part in this research study?**  
All that will be asked of your participation is that you answer honestly so that your feedback can be combined with the opinions of other students to give a clearer picture of how students view the importance of non-cognitive skills such as time management and self-efficacy in relation to academic achievement. There is no penalty for NOT participating.
6. **How long will the study take and how many subjects will participate?**  
The survey portion of the study should not take more than 15 minutes to complete. If you choose to become part of the second part of the study, this would involve joining six – eight (6-8) fellow students to further discuss non-cognitive or soft skills. This portion of the study, should you choose to participate, will involve no more than 60 minutes of your time and will be conducted via Zoom.
7. **What are the risks and/or discomforts you might experience if you take part in this study?**  
There are no risks associated with participating in this study.
8. **Are there any benefits if you choose to take part in this research study?**  
The benefits of taking part in this study may be: contributing to advancing the research of understanding how students view the importance of soft skills and any relation to academic success. However, it is possible that you might receive no direct personal benefit from taking part in this study.

**9. What are your alternatives if you don't want to take part in this study?**

There are no alternatives if you do not want to take part of this study. Simply do not respond to the initial survey.

**11. What will happen if you do not wish to take part in the study or if you later decide not to stay in the study?**

Participation in this study is voluntary. You may choose not to participate or you may change your mind at any time.

If you do not want to enter the study or decide to stop participating, your relationship with the study staff will not change, and you may do so without penalty and without loss of benefits to which you are otherwise entitled.

You may also withdraw your consent for the use of data already collected about you, but you must do this in writing to Laura Adriano – 201 Mullica Hill Road, Glassboro NJ 08028, Attention: Savitz Hall / RLUH Office

**12. Will there be any cost to you to take part in this study?**

There will be NO COST to you to participate in this study.

**13. Where will this study be conducted?**

This study will be conducted via Zoom.

**14. How will you know if new information is learned that may affect whether you are willing to stay in this research study?**

During the course of the study, you will be updated about any new information that may affect whether you are willing to continue taking part in the study. If new information is learned that may affect you after the study or your follow-up is completed, you will be contacted.

**15. How will information about you be kept private or confidential?**

All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. All information and data collected will be stored on a password protected laptop and will be deleted / destroyed at the conclusion of the study.

**16. Will you be paid to take part in this study?**

You will not be paid for your participation in this research study.

**17. Who can you call if you have any questions?**

If you have any questions about taking part in this study, please contact:

Laura Adriano

609 / 820-1391

**18. What are your rights if you decide to take part in this research study?**

You have the right to ask questions about any part of the study at any time. You should not sign this form unless you have had a chance to ask questions and have been given answers to all of your questions.

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## AGREEMENT TO PARTICIPATE

I have read this entire form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form or this study have been answered.

Subject Name: \_\_\_\_\_

Subject Signature: \_\_\_\_\_ Date: \_\_\_\_\_

### **Signature of Investigator/Individual Obtaining Consent:**

To the best of my ability, I have explained and discussed the full contents of the study including all of the information contained in this consent form. All questions of the research subject and those of his/her parent or legal guardian have been accurately answered.

Investigator/Person Obtaining Consent: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix C

### Audio Consent Form

#### ROWAN UNIVERSITY INSTITUTIONAL REVIEW BOARD AUDIO/VIDEOTAPE ADDENDUM TO CONSENT FORM

You have already agreed to participate in a research study conducted by Laura Adriano. We are asking for your permission to allow us to audiotape as part of that research study. You do not have to agree to be recorded in order to participate in the main part of the study.

The recording(s) will be used for transcribing the conversation to analyze data collected.

The recording(s) will include no personal identifying information.

The recording(s) will be stored on a password protected laptop computer and will be deleted at the conclusion of the study. All physical transcriptions will be destroyed at the conclusion of the study.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

\_\_\_\_\_  
Please print name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Appendix D

### Qualtrics Survey

#### How old are you?

- 18-20 years old
- 21-24 years old
- 25-30 years old
- 31+ years old

#### What gender do you identify as?

- Male
- Female
- Non-binary
- Gender Queer
- Gender Neutral
- Trans-male
- Trans-female
- I prefer not to disclose

#### What racial group do you identify with? Please select all that apply.

- Black / African American
- Latino / Latina
- Native American / Native Alaskan
- Caucasian / White
- European
- Middle Eastern
- Asian
- South Pacific Islander
- Other
- I prefer not to disclose

#### You are currently enrolled as a:

- Full-time student (12 credits per semester or more)
- Part-time student (6-11 credits per semester)
- Less than 6 credits

#### Which college or school are you a student? Select all that apply.

- Rohrer College of Business
- Ric Edelman College of Communication & Creative Arts

- College of Education
- Henry M. Rowan College of Engineering
- College of Humanities & Social Sciences
- College of Performing Arts
- College of Science and Mathematics
- Honors College
- School of Earth & Environment
- School of Health Professions
- Global Learning and Partnerships

**During the time school is in session, do you work at a job for pay either on or off campus?**

- Yes – off campus full-time (30+ hours a week)
- Yes – off-campus part-time (1-29 hours a week)
- Yes – on campus full-time (21+ hours a week)
- Yes – on campus part-time (1-20 hours a week)
- No – I do not work either on or off campus

**Where do you live during the school year?**

- On campus in university housing (Either a building owned by your university or an affiliated building)
- Off campus (Either in a rental property with a parent / guardian / other family member / friends)

**What is your current GPA (as of Fall 2020) on a 4.0 scale? (Rounded to the nearest quarter)**

- [text entry]

**Thinking about skills that impact your learning and college experience, which of the following - if any - did you learn plays a role in academic development? Please answer as Very Important – Important – Not Important – Not Very Important – Neither Important nor Not Important.**

- Time Management
- Self-efficacy
- Speaking and Writing Effectively
- Critical Thinking Skills
- Analytical Thinking Skills
- Perseverance / Grit
- Self-control
- Delay of Gratification

- Social Skills
- Leadership Skills
- Community Service
- Understanding Other Countries or Cultures
- Good Health and Eating Habits

**Thinking about you specifically, which of those same skills played a role in YOUR academic development? Please answer as Very Important – Important – Not Important – Not Very Important – Neither Important nor Not Important.**

- Time Management
- Self-efficacy
- Speaking and Writing Effectively
- Critical Thinking Skills
- Analytical Thinking Skills
- Perseverance / Grit
- Self-control
- Delay of Gratification
- Social Skills
- Leadership Skills
- Community Service
- Understanding Other Countries or Cultures
- Good Health and Eating Habits

**To what extent do you agree with the following statements? Please answer Strongly Agree – Somewhat Agree – Neither Agree nor Disagree – Somewhat Disagree – Strongly Disagree**

- During my undergraduate experience, I grew and developed as a person.
- During my undergraduate experience, I discovered new things about myself.
- During my undergraduate experience, I achieved more than I thought I could.
- During my undergraduate experience, I found that there was more to being a good student than memorization.
- I feel that Rowan University actively assisted me in becoming a better student.
- I feel that Rowan University fully prepared me to participate in my chosen field.

**Thinking about your time spent as an undergraduate, what is the one thing you wish you knew as a freshman that would have helped you academically?**

- [Text]

**Again, thinking about your time spent as an undergraduate, where could Rowan University have offered more support to help you be more successfully academically?**

- [Text]

**You have reached the end of the survey. Before submitting, would you be interested in participating in a brief 30-min Zoom focus group during the week of February 25th?**

- Yes
- No

**If “yes”, please complete the following fields:**

- First Name
- Email Address

## Appendix E

### Interview Questions

1. When you think of non-cognitive, or soft skills, what comes to mind?
2. What impact do you think those skills have on your academic performance?
3. Do you think it is important that these skills are taught alongside traditional academic subjects?
  - a. If so, how do you think Rowan could better support learning / acquiring these skills?

## Appendix F

### Recruitment Email

#### A Mixed Methods Study Examining Student Perception of Non-Cognitive Skills and Academic Performance

Greetings!

I am reaching to you today to ask for your participation in a study I am doing in conjunction with completing my master's degree in Higher Education Administration. I am looking to better understand how students perceive non-cognitive, or soft, skills such as time management, persistence, self-efficacy, and goal setting. I am inviting asking all seniors, currently enrolled in college, to complete a short survey. If you would like to contribute further, you will have the opportunity to join in a focus group.

The survey will take about 10 minutes of your time to complete. Should you decide to participate in the focus group, that would be conducted via Zoom and would involve an additional 30-40 minutes.

All information gathered would be anonymous and completely voluntary. Data collected will be destroyed when the study is completed.

The consent form is attached to this email. If you are interested in participating, please complete this survey (linked here). There will be an opportunity at the end of the survey to indicate your interest in participating in the focus groups. Again, this is entirely optional.

Thank you very much and I look forward to reviewing the data collected.

Study has been approved by Rowan IRB. IRB#PRO2020215

Sincerely, Laura Adriano / [Adriano@Rowan.edu](mailto:Adriano@Rowan.edu)