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Relationship Between Non-Cognitive Skills And GPA In A Rural Maine Community College

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Relationship between Non-cognitive Skills and GPA

in a Rural Maine Community College

By

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Rebecca A. Martin
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Relationship between Non-cognitive Skills and GPA in a Rural Maine Community College

ABSTRACT

The 21st century has altered the workscape, emphasizing non-cognitive skills required for success in the workforce. Community colleges that profess workforce readiness in their workreadiness programs use primarily cognitive assessment to ensure content and curricular learning. This quantitative study of rural Maine community college graduates examined non-cognitive workforce skills from this workforce readiness institution, correlating non-cognitive instrument scores to the standard cognitive score, cumulative grade point average (GPA). The Social-Emotional Health Survey-Higher Education (SEHS-HE) and the Review of Personal Experience with Locus of Control (ROPELOC) data were examined in relation to cumulative grade point average (GPA) to assess for the presence of non-cognitive schemas in graduating respondents. Statistical analysis of this data revealed that only 15% of the non-cognitive skills assessed were found to be correlated with GPA, while 35-40% of students responding to the surveys graduated from the institution with less than average non-cognitive scores, and scored an average of 35 points less than ideal scores, on both instruments. This study suggests there is little relationship between non-cognitive skills and GPA. Community colleges may need to refine assessments and practices to ensure graduates are truly being prepared for the 21st century workplace.

Key words: *Positive psychology, covitality, non-cognitive, psychometrics, workforce readiness*

University of New England

Doctor of Education
Educational Leadership

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DEDICATION

This research is dedicated to every student that ever felt that they knew without knowing. It is dedicated to instructors who are commited to teaching and learning. This work signifies a psychotherapeutic leap into education, and is dedicated to the human desire to succeed and flourish.

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"No one is born fully-formed:

it is through self-experience in the world that we become what we are."

— Paulo Freire

"For apart from inquiry, apart from the praxis, individuals cannot be truly human.

Knowledge emerges only through invention and re-invention, through the restless,

impatient, continuing, hopeful inquiry human beings pursue in the world, with the world,

and with each other."

— Paulo Freire

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CHAPTER 1

INTRODUCTION

Students are more frequently enrolling in American Community Colleges as their post-secondary educational choice. According to the United States Department of Education, the number of students attending community colleges has increased dramatically. At the end of the 20th century, approximately 5.6 million students were enrolled in a for-credit program at a community college, while in 2014, the number of students enrolled surpassed 7.3 million (US Dept. of Education, 2017, para. 3). These numbers represent 42% of all the students enrolled in undergraduate classes, in that year (Ma & Baum, 2016). The Community College Review (2003-2018) examines the reasons students are making this decision to continue their education at Community Colleges. These include the higher tuition rates, more stringent admission standards and larger class sizes at traditional four year institutions; while students are drawn to the open admissions process, lower educational requirements for entry required, lower tuition costs, the need for practical skills/certifications in the workforce, and the flexible scheduling possibilities at community colleges (Community College Review, 2003-2018, para. 6-8). These community college populations, however, reflect a high number of drop-outs in enrollment and a general lack of persistence. In fact, the completion rate after six years for all community college students is only 39% (Fain, 2015, para. 3). With this statistic in mind, this researcher used quantitative methodology and a Positive psychology constructivist frame to examine the non-cognitive skills that have been found to correlate with improved academic outcomes, specifically related to workforce success in the 21st century.

Kafka (2016) emphasizes the tools and assessments required in community college success, indicating an emphasis on non-cognitive skills, and encouraging the application of assessments to measure these skills. Non-cognitive skills, according to Kafka (2016), "refers to a group of skills and attributes that, although difficult to define and measure, are widely acknowledged to be essential for student success" (p. 1). This study examined a rural Maine community college's graduates using two of these non-cognitive skill assessment instruments, and explored the interrelationships among these measures and grade point average (GPA). Driving this research was the hypothesis that success in community college includes the development of specific non-cognitive capacities. Framing this research within an understanding of 21st century workforce skills, emphasizes these non-cognitive components, often missing from educational assessments and are an ideal area of research during this period of systemic transformation marked by the needs of a new millenium.

The Institute for the Future (IFTF), a strategic research nonprofit focused on transformative trends in education, created a 21st century workforce report entitled Future Work Skills 2020 (IFTF, 2011). The report indicated that the non-cognitive skills required in the 21st century workforce are:

- Sense-making: the ability to determine deeper meanings.

- Social intelligence: the ability to connect deeply and directly, with reciprocity and adaptive responsiveness.

- Novel thinking: proficiency at creative problem-solving with flexible solutions.

- Cross cultural competency: the ability to operate in different and diverse settings.

- Computational thinking: the ability to synthesize, translate, and reason abstractly and algorithmically.

- New media literacy: proficiency with critical assessment and development of technology and media to leverage communication.

- Transdisciplinarity: literacy in concepts across disciplines.

- Design mindset: growth and resiliency focused identification of the problem that supports the conceptualization of a solution that leads to a desired end.

- Cognitive load management: proficiency with discriminating, prioritizing and filtering information in order to maximize cognitive energy.

- Virtual collaboration: productive engagement and positive presence in experiences with virtual connections (IFTF, 2011, pp. 8-12).

These skills, though incorporating some cognitive and curricular content, are largely based on intra-personal and inter-personal processes related to how a mind organizes information, creates meaning, and utilizes knowledge. In psychology and the theory of constructivism this mental modeling refers to 'schema,' or 'schemata.' Schema are reflexive mental models, resulting from individual interaction and experiences. These constructs are hypothesized as the "mechanisms by which knowledge is internalized by learners" (Sematicscholar, n.d., p. 2). Additionally, the mindset and collaborative tendencies listed are socio-emotional in nature. This study's examination of the self-reported non-cognitive schemas of graduating community college students, which are so pertinent to academic and professional success, is an answer to Kafka's (2016) call for non-cognitive skills measurement as a required part of evaluating community college students' successes.

Historically community colleges prepare individuals to be a part of a skilled workforce, and current socio-political trends continue to highlight the importance of community college education, especially within rural communities. Community colleges serve a specific training role in the higher education system, intending to lead to economic stability. In general, open admissions policies, low tuition, and geographic location make these institutions appealing to individuals with low-income, part-time students, individuals with dependents, first generation students and adult learners requiring retraining or workforce readiness preparation (Ma & Baum, 2016). This rural community college in Maine reflects this composition of students exquisitely.

With the increase in enrollment and the workforce training mission of these community institutions, an increase in analysis regarding the cognitive and non-cognitive skills and content addressed in this community college educational experience is an important process in which to engage. As the 21st century continues, specific skills and training is required for success in the workforce. Are these skills addressed in the community college setting? Does a community college education prepare students successfully regarding these workforce skills? A quantitative analysis to examine whether non-cognitive outcomes are achieved in this context was the first in many steps toward the implementation of evidence-based practices that align teaching and learning, theory and practice. To accomplish this, a Positive psychology framework was adapted from the counseling to the classroom setting.

The American Psychological Association (APA) reviews evidenced-based teaching for higher education (Schwartz & Gurung, 2012), emphasizing the need to expand areas of research in scholarship of teaching and learning (SoTL) that removes instruction from intuitive and anecdotal practices to explore the scientific evidence of effectiveness. This study uses quantitative evidence-based data to reveal whether the result of community college education

meets the non-cognitive needs of the students entering the economic environment after graduation. The research uses statistical data and transdisciplinary overlaps from workforce and educational researchers by presenting a Positive psychology perspective to frame the non-cognitive skills as schemas required of graduates, and described as necessary for success. This analysis of non-cognitive outcomes is a necessary evaluative tool in community colleges, as reform policies are encouraged by legislation and transformational change movements, and accountability practices are used to examine educational standards of success in higher education.

The non-cognitive skills under analysis are measured by two Likert-scaled surveys: the Social-Emotional Health Survey--Higher Education (SEHS-HE) measuring 12 psychological traits, associated with four domains: belief-in-self, belief-in-others, engaged living, and emotional competence; and the Review of Personal Effectiveness with Locus of Control (ROPELOC) instrument, measuring 14 scales in four areas: personal abilities and beliefs, social abilities, organizational skills, and an active involvement scale. Additionally, this version of the Life Effectiveness Questionnaire (LEQ) includes two Locus of Control scales. These measures reflect the non-cognitive schemas possessed by the graduating study participants.

In the context of the 21st century, specific non-cognitive skills are requisites for success. Educational institutions typically relate success to academic outcomes and content driven core curriculum. Community colleges are organized around workplace readiness and skill development. Do these community colleges incorporate non-cognitive skills building? Are students that graduate from these academic institutions graduating with the skills that they need for success in the workplace?

Using psychometrics allows researchers to examine psycho-social assets required for academic and professional success, and they can begin to explore success as related to non-cognitive processes in order to transform educational practices. This Positive psychology approach emphasizes non-cognitive values and strengths. It uses these non-cognitive instruments of student's self-schemas, such as the measure for covitality, a construct to study strengths in combination (e.g. self-efficacy, emotion regulation, empathy, self-control, gratitude, persistence). This strengths-based non-cognitive schema analysis is a needed trend in education reform. These covital constructs have significant correlations between student subjective well-being and successful academic performance, and they represent many of 21st century workforce skills outlined in the Institute for the Future's report.

The research focus addressed student achievement within a rural Maine community college and used non-cognitive instruments (the SEHS-HE and the ROPELOC) to expose potential correlations to academic success. The manifest questions driving this research were: How do student non-cognitive assessment scores relate to student academic performance? Do higher covitality and personal effectiveness measures relate to better academic performance? Are non-cognitive skills apparent after the graduating students' learning experience?

Statement of the Problem

The new American college, described by Boyer (1994), is an "institution that celebrates…its capacity to connect thought to action, theory to practice" (p. 14). A problem in educational research has been linking theory to practice, for instance, connecting the educational experience in community colleges to the workplace needs of the surrounding community. According to workforce success research, non-cognitive skills are a missing piece in content based curriculum. Lack of such skills may result in graduating students being unprepared for

successful functioning within the workforce. As community colleges identify themselves specifically as workforce readiness institutions, it is imperative that research reveals whether these skills are being transmitted within educational experiences.

For successful workforce functioning, employees must possess specific non-cognitive skills. Given this simple expectation that theory and practice should be aligned, and education should address workforce skills, it is imperative that instructors integrate non-cognitive skills-building into the learning experience of community college students as a means of workplace preparation training. Though the content of a course in higher education is a priority, workplaces are looking for employees that have empathy, effective social skills, and who are engaged citizens within the interconnected systems involved (e.g. education, economy, employment, society). Using a Positive psychology framework to analyze educational outcomes allows evidence-based quantification of these non-cognitive, 21st century workplace skills, while connecting theory and practice to support a meaningful definition of success across systems. (See Figure 1.1)
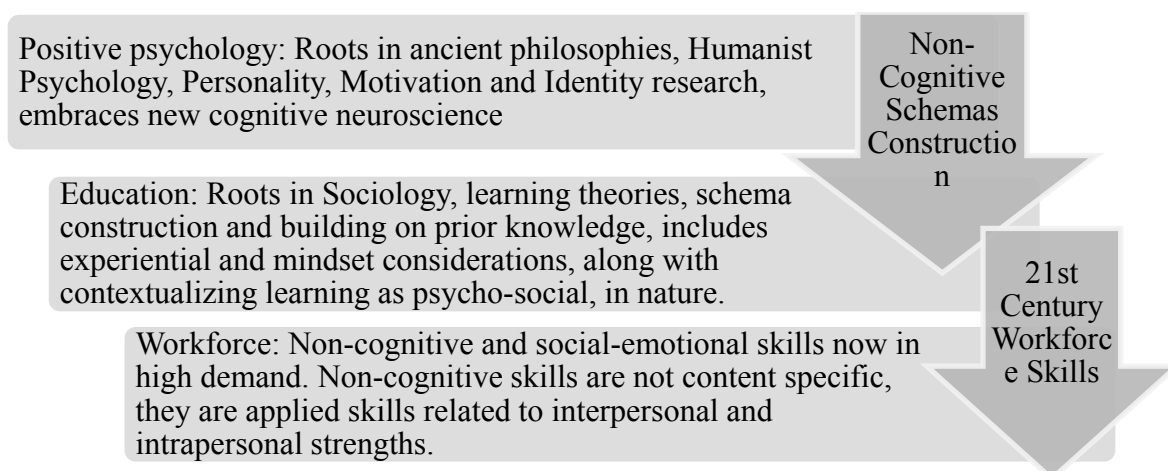
Figure 1.1: Multisystemic Integration of Theory and Practice. Rebecca A. Martin, 2018.

According to the Community College Research Center (CCRC) and the National Center for Education Statistics (NCES), 44% of the students who attend community college have family incomes of less than $25,000 per year. Additionally, 38% of these students have parents who did not graduate from college. Shapiro et al. (2017) review the diversity statistics comprising American community colleges to reveal disadvantaged populations choosing community college as their higher education alternative; and Chen and Simone (2016) note that in their statistical analysis of students in two year public community colleges during 2003-2004, 68% took one or more remedial courses and 48% took two or more remedial courses. These numbers increased by 35% in the 2011-12 enrollment year. The remedial focus on cognitive skills is clear. But, what about non-cognitive skills? This researcher hypothesized that using a Positive psychology, psychotherapeutic lens reframes the cognitive remediation approach by highlighting non-cognitive skills. This systems approach allowed for a systems understanding of learning through a constructive framework in this most democratizing institution, the American community college.

In 2017, the Maine Community College System (MCCS) prepared and delivered its program Evaluation Report (2017). MCCS is comprised of seven colleges, with campuses or centers located within 25 miles of approximately 90% of Maine's residents. MCCS (2017) presents their primary goal as: "creating an educated, skilled and adaptable labor force that is responsive to the changing needs of Maine's economy" (p. 2), with a stated priority of students thriving in the educational and professional work place. Though Maine has a low degree attainment rate and the lowest per capita income in New England, this goal requires educators to better define *thriving*, and to more clearly establish success outcomes through the evaluation of non-cognitive skills.

MCCS research and strategic planning recognize that many students find admissions criteria confusing and family support for students is weak with a lack of understanding of what it takes to go to college (MCSS, 2016-2020). Additionally, the systems in which students are embedded, from family, financial, economic, housing, medical to mental health, present multiple barriers to success for the college students. Some have identified food insecurity and other socio-economic disadvantages, while others have substance use issues or legal difficulties stemming from both custody and family concerns, or from a history of violations of the law. The College is serving under-prepared adults who are challenged in multiple roles, along with the difficulties innate to the balance of education, work and family. Given the lack of academic preparedness of the applicants enrolling in Maine Community College System schools, deficit recognition and attention to remedial has been required.

According to the Maine Community College System Publications and Reports (2017) commissioned educational and economic researchers describe that by 2020, 66% of all Maine jobs will require post-secondary education, and the current percentage of adults with an associate degree or higher is only 39% (p. 23). These jobs will require non-cognitive skills. In the fall of 2014, 18,160 students were enrolled in the MCCS. By 2017, MCCS reports that the system colleges serve some 30,000 each year through academic programs, customized training for businesses and industries, and through continuing education. In the fall of 2017, 2,100 students entered directly from high school; however, the average age for a student within MCCS is 27 years, and over half of the total student enrollment have dependents, while 56% report working more than 20 hours a week while attending. In fact, Maine's Community College population includes:

- 26% of students spending more than 30 hours a week caring for dependents

- 31% having children living with them

- 31% working more than 30 hours weekly, while attending classes

- 82% of full-time, degree-seeking students requiring financial assistance (MCCS, 2017)

These systemic psycho-social stressors, associated with community college attendance, may be some of the reasons that 51% of community college students fail to persist (Center for Community College Student Engagement, 2013). In addition to persistence issues, a systemic problem is documenting whether the non-cognitive skills required for successful job performance are transmitted within the community college experience. Transformational reform that is responsive the non-cognitive needs of these students, given these stressors, is worthwhile to investigate and requires the application of social science within educational research. This study emphasized a strengths-based and value-laden focus on covitality and non-cognitive skills of students within the community college in an effort to correlate academic performance via GPA as a demonstration of workplace readiness, upon student graduation.

MCCS (2017) looked to the Center for Community College Engagement (CCCSE) to identify success measures, inclusive of but different than the standard academic outcome-oriented measures. The covital constructs surrounding student engagement were explored, including improvements to persistence, academic achievement, and completion associated with student perception of connection to learning, the college, and the faculty (p. 48). Many threats to student engagement and success exist, but are there quantitative measures that can bring congruity to educating and training a workforce?

As a psychotherapist in private practice, and an adjunct faculty member at a rural Maine community college, this researcher views student functioning through a psychotherapeutic lens. In the counseling room, this clinician assesses psychological assets and self-awareness as key features in successful therapeutic outcomes, why not bring this method from counseling to the classroom? Borrowing from the fields of social science, this researcher used a Positive psychology orientation of strengths identification in the field of education. With the assumption that learning requires students to construct new schemas and colleges create specific core outcomes aligned with the cognitive aspects of curriculum, this researcher measured non-cognitive schemas as associated to cognitive schema measurement (GPA) to consider the role of non-cognitive measurements in educational assessment.

Purpose of the Study

In 2006, the Commission on the Future of Higher Education issued a report calling for transformational reform in higher education. Policies highlighting deficit models, problem-centered foci, and lack of transparent processes have drawn attention to academic success rates (persistence, completion) and remedial services, creating a systemic need for realigning theory and practice, thoughts to action. Lack of workplace readiness, failures to persist or complete, an increased need for non-cognitive skills and socio-emotional skills-building, remediation, disability and accommodation, dependence on contingent instructors, and the transitions related to institutional identity are among some of the issues identified by community college policy-makers in the United States. Do instructors consider theories related to non-cognitive skills building? Could a strengths-based assessment of skills and values reveal any additional information regarding a student's educational experiences in community colleges? How can transformation successfully occur?

The report emphasized four specific needs required for transformation: 1) higher education must be more efficient and productive; 2) higher education must become more accountable to the constituents involved; 3) higher education should provide more useful information to its consumers; and 4) higher education must manage itself using better data (US Department of Education Secretary's Commission of the Future of Higher Education, 2006). This report issued a charge to educators: "defining appropriate measures of success, collecting more comprehensive data, and testing and refining strategies at improving student outcomes" (MCCS, 2007, p. 47) must fuel the transformational change required. Documenting non-cognitive skills of the community college graduates to examine workforce readiness is part of this call for change.

As the field of education establishes new learning requirements for the 21st century, these non-cognitive components may be an important complement to curriculum design. Positive psychology researchers reject the deficit model, the co-occurrence of multiple problems or disease states utilized by much of the western world. Instead, Positive psychology embodies a strengths-based process. To examine the co-occurrence of non-cognitive psychosocial strengths, a new construct called 'covitality,' has been introduced. Covitality is a consideration of psychological strengths occurring together, in specific combinations. This strengths-based shift is especially important within education research that traditionally assesses students based on deficits or difficulties, in order to target remediation or to ameliorate the impact of problems. Instead of problem-resolution, as a common perspective in educational assessment and accommodation, strengths-amplification is a pivotal practice.

Educators not using a Positive psychology framework may be using a deficit model that proposes that success and failure exist on one continuum, such as the continuum between health

and sickness used with a medical model--each laying at opposite poles. In this model, insufficiencies prohibit adequacies: if you are sick, you are not well. The focus on what is wrong subsumes identification of what may be right. This is evident through a review of educational literature addressing risk factors, remediation, and emotional-behavioral interventions used throughout education organizations. Individuals generally gain attention when something is going wrong. So, negative experiences, challenges, or deficits become the status quo of operation. When the deficit model of assessment is a primary perspective within the United States educational system, feedback becomes problem-centered, such as with plans of corrections or behavioral plans, remedial classes, etc. In these cases, based on psychology's schema construction theories, the experience begins to be defining, and so student self-schemas become deficit-based (Collins & Camblin, 1983; Ferri & Connor, 2006; Klingner, 2007; Moll, 1990; National Research Council, 2002; Sleeter, 1986).

The problem-focused approach taxes resources, causes stigmas, and identifies individuals as their issues, problems or illnesses, which impacts self-concept and learning. Instead of improving functioning through the cultivation of strengths, the focus is on attempting to diminish the impact of poor performance. Learning, in this context, is influenced by both cognitive and non-cognitive processes. In standard deficit models, a student may compose their schemas (of self and others) based on deficit-built representations derived from 'earned' grades, remedial interventions and feedback.

Educators must understand that this feedback can be defining. Emphasizing the deficit model of problem identification and driving toward deficit resolution limits the potential held in Positive psychology where stregnths and values become protective factors that foster students' personal and professional schemas required for success. Utilizing a strengths-based approach and

addressing educational experiences through the framework of Positive psychology as an alternative to the deficit model, which highlights symptoms or insufficiencies, should be a primary focus in education. A Positive psychology approach emphasizes skill development and recognition of an individual's strengths and values. An emphasis on these non-cognitive skills, in fact, may introduce thriving and optimal functioning from the psychotherapy field to the academic realm.

Community colleges are institutions founded on skill development and technical training, making these organizations prime areas to research. Positive psychology promotes a treatment model that aligns with strengths of the individual, and incorporates a systems view, advancing the importance of 21st century skills as they relate to academic performance. This research is an important next step in strengths identification through non-cognitive assessment within community colleges.

This study utilized strengths-based, information seeking practices to support definitions of success which answer to MCCS's concerns regarding successful transformation, reflecting data that may help to make educators accountable to the processes that lead to desired outcomes. This was accomplished by utilizing quantitative data to assess non-cognitive skills in students graduating from a rural Maine community college, demonstrating that a reforming process is necessary to better align non-cognitive preparation with the college experience.

The New World of Work (NWoW) discussion panel (2014) on Community College practices in alignment with 21st century skills focuses on the need for data-driven strategies to conform the 21st century workplace skills to college educational outcomes and resolves. This panel determined that self-awareness in the student population, an understanding of their personal skills, strengths and values, is an adaptive intervention in higher education, suggesting

that self-assessments and career assessments should be used to support student self-awareness development. This study uses two such self-assessments, the SEHS-HE and the ROPELOC, to measure the non-cognitive skills specific to this community college population.

The NWoW panel, additionally, highlights the following non-cognitive skills relevant to desired outcomes:

- Social (diversity) awareness: productive relational skills across diverse experiences and fields.

- Resilience: the ability to cope with change, bounce back after failure or challenge, emphasizing a growth mindset within personal skill development.

- Empathy: a non-cognitive socio-emotional skill, emphasizing others as allies and collaborators rather than competitors or obstacles (Schultz & Gills, NWoW, 2014).

This researcher believes that these clusters of non-cognitive strengths, then, also become associated with 21st century workplace success, further supporting strengths identification represented by the Positive psychology framework in the present study which provides a psychotherapeutic emphasis on educational reform. Understanding these psychological processes in Positive psychology's systems and strengths-based framework supports a redefinition of successful academic outcomes. Operational definitions of these covital and non-cognitive skills will be available at the end of Chapter One, and these terms will be explored in detail within the literature review.

NWoW indicates that non-cognitive and socio-emotional skills are not traditionally "…taught or assessed through education, but [they] should be added to curricular requirements to fully prepare the future workforce" (Schulz & Gills, 2014, p. 13). If future successes in the 21st

century workforce are to occur, community college leaders must link this non-cognitive training to the educational experience, and gather data to better understand whether these skills are embedded in the learning provided in this context.

Furlong, Carnazzo, Dowdy, and Kim (2014) have developed a unique covitality measurement for non-cognitive skills in higher education, the Socio-Emotional Health Survey-Higher Education (SEHS-HE). The SEHS is based on the premise that thriving and success is grounded, in part, in the conditions of a youth's life that foster the development of internal psychological dispositions associated with (a) positive beliefs or confidence in self, (b) a sense of core trust in others, (c) a sense of emotional competence, and (d) feeling engaged in daily living. "These internal assets exert their primary effect by fostering an upward spiral in the quality of interpersonal transactions that occur…" (Furlong et al., 2014, p. 5).

This framework suggests that these covital dispositions lead to multiple mental health and academic benefits. "By developing these positive psychological dispositions in schools, educators foster a youth's ability to meaningfully engage in the interpersonal transaction that facilitate his or her near- and long term development across their biopsychosocial developmental domains" (Furlong et al, 2014, p.5). Assessing the development of these non-cognitive skills within the setting that specializes in workforce preparation, community college, is a worthwhile exploration.

Covitality, a specific clustering of non-cognitive skills, as a specific definition, is a factor analysis of particular individual strengths. There are four components, each measured through strengths analysis and psychometrically supported. Positive psychology has endorsed this developmental assets approach to education (Benson & Scales, 2012) which emphasizes internal (psychological) and external (sociological) assets, rather than identifying problems or deficits.

Positive psychology focuses on how to build and reinforce these strengths and other non-cognitive assets. Huebner, Gilman, Reschly, and Hall (2009) indicate that this integrated, multi-systemic research can be used to create proven practices to support "psychologically healthy educational environments for [all]…" (p. 565). Covitality exploration in higher education, especially in relation to the 21st century workforce skills highlighting self-awareness, resiliency, and strengths and values, opens the door for transformative education reform.

Covitality and personal effectiveness measures capture a range of social and emotional skills built within an individual's schemas as a result of developmental experiences using a strengths-based model. These self-and-other schemas are correlated to multiple measures of life satisfaction and wellness measures (Furlong, You, Renshaw, Smith, & O'Malley, 2013) and researchers are applying these schemas to education, revealing multiple correlates between academic success and improved success measures (Ito, You, Smith, & Furlong, 2015). These measures are not the first multifactorial, higher order traits to be examined. In fact, according to the literature (Carroll, 1993), the general intelligence factor represents a similar higher-order factor that subsumes multiple cognitive and problem-solving constructs. Psychological strengths permeate many other performance and personality components, as well. In fact, the big five personality construct (measures of the collection of traits related to openness to experience, conscientiousness, extraversion, agreeableness and neuroticism) is a higher order trait with five componential factors.

The covitality score, measured by the SEHS-HE focuses on higher order traits such as mentioned above, which means that this instrument examines the clustering of component parts. Similarly, the ROPELOC, used to measure sense of personal effectiveness and locus of control as part of non-cognitive measurement of life effectiveness, also utilizes higher order clustering to

measure compenential pieces. These instruments were utilized in order to examine the non-cognitive attributes within schemas of the graduating students in association with their grade point average, in so doing the componential constructs could be statistically examined as well.

Research Questions

It is important to ensure workplace preparedness is addressed as a result of the educational experience. This research imagines academic improvements and enhancements within multiple domains, the workforce, included, as they relate to student's self-assessment of these componential higher order constructs.

This researcher asks the following questions:

1) What are the self-assessment scores of the community college students on the Social Emotional Health Survey-Higher Education and the Review of Personal Effectiveness with Locus of Control?

2) What is the relationship amongst these non-cognitive measures and graduating students' GPA?

3) What patterns emerge when inter-instrument comparisons are made?

Psychotherapeutic counselors evaluate, as standard practice, the multiple systems in which individuals are embedded. In an effort to take a holistic and integrative view of well-being and academic performance, educators need to do the same. Student well-being and non-cognitive capacities cannot remain an underestimated feature within educational outcomes. The present study applies psychotherapeutic practices to education by measuring the relationship between specific non-cognitive strengths with academic success related to GPA. Addressing how this

educational setting may cultivate a climate to improve student functioning across domains will be included in the culminating discussion.

An educator can learn from the practice of therapy where the charge of the practitioner is "building competencies and promoting adaptive functioning" (Schueller, 2009, p. 922). Educational leadership should explore the importance of these non-cognitive processes and their transformative potential to shape students into successful learners and employees. This quantitative research gathered information through the use of non-cognitive self-report instruments which measured psychological assets to better understand the connection among these and academic success through GPA measures.

As reviewed previously and as anecdotally observed, community college students generally have an increased amount of psycho-social stressors. Institutions such as community colleges should focus on strengths building and workforce readiness not prototypically available in the deficit model that drives education with emphasis on cognitive and curricular academic outcomes. This researcher believes that educational assessment should measure the development of non-cognitive skills, creating an opportunity for defining/redefining strengths and values in this time of student learning. Failure to identify strengths and values in students' schemas may contribute to a failure to persist, as well as other poor academic and interpersonal outcomes. Identifying and attempting to strengthen students' self-schemas through examination of covitality and accompanying non-cognitive strengths may be a more appropriate definition of success then curricular concentrations considering the needs of the 21st century workforce.

Conceptual Framework

This study utilized Positive psychology to highlight and emphasize covital strengths, and explored whether non-cognitive strengths are related to academic performance. These strengths

were measured using the SEHS-HE to measure skills in four domains constructed of twelve

traits, called covitality, and the ROPELOC instrument to measure skills associated with personal

abilities and beliefs, social abilities, organizational skills and active involvement as related to

21st century workplace skills. This multidisciplinary and integrative approach implies that

human consciousness is a complex overlay of interwoven experiences, a sophisticated unknown

that forms and informs experience in dynamics ways. This research is also informed by a

Constructivist model which highlights schema creation and experiential learning throughout

development.

The theories that drive this research have to do with fundamental psychological processes

and constructs embedded within Positive psychology. Fundamentally, an individual constructs

their ideas of persons, places and things, including one's self, psycho-socially. Called 'schemas,'

these constructed representations or mental conceptions and expectations, are an organizing

heuristic that supports information handling. Learning theories, such as Tinto's (1975) adult

learning theory exploring the roles of academic and social engagement; Vygotsky's (1978)

philosophy of learning and education, remarking on proximities and zones of learning, along

with ideas of scaffolding, accommodation of information, and building understanding; and

Dewey's (1910) work regarding pragmatic and progressive experiential and values-based

education and reflective requirement, all suggest that these abstract mental categories hold

beliefs, knowledge, and ideas related to one's world and their experiences within it. Piaget

(1936) brought schema vocabulary into cognitive development research and related learning and

intellectual growth to schema formation and adaptation. These theories suggest that personal

functioning within the social act of learning relates to academic performance. Learning and

knowing come from the non-cognitive origins of self in conjunction with others and

environment. This research focused on the self-assessment of these schemas related to self and others, and examined whether covitality and personal effectiveness scores are related to successful academic outcomes.

The Constructivist view takes schemas one step farther to argue that reality is subjective and not absolute, rather, "It is made up of the network of things and relationships that we rely on in our living, and on which we believe, others rely on, too" (Von Glaserfeld, 1995, p. 7). Heylighen (1993) added that there is a social constructivism related to schemas, and that knowledge is a shared co-construction. Schemas, then, allow individuals to organize and interpret their world; and, the process of forming schemas is a co-created process based in experience.

The co-creating process incorporates a fundamental belief in the personal will of self and expectations around belief in others, and the manner in which those are created. Texts reveal that these processes are iterative, generate and influence process, and have a reciprocal impact on internal and external bio-psycho-social-spiritual schemas, non-cognitive and covital. This process incorporates a fundamental belief in the stories we tell ourselves, and the manner that is created. This researcher believes that Positive psychology adopts this social constructivist viewpoint, while adapting this composition of self to the three pillars of Positive psychology: individual traits, experiences and institutions.

A Positive psychology perspective implies that science from psychology may be the most useful tool to support student development within the educational system. Though family systems continue to be the primary acculturative influences, teachers (supporting the organization of an individual's schemas through the education system) play a larger and larger role. Given their influence, school performance, schema construction, and mental health factors

can be largely dependent on students' experiences at school and can reinforce non-cognitive habits related to self and others (Ayers, 2004; Bonner, Lewis, Bowman-Perrott, Hill-Jackson, & James, 2009; Chafouleas, & Bray, 2004; Dweck, 1999; Klein, 2005; Makarushka, 2002).

Further examining the Positive psychology and Constructivist framework, Systems theories, such as Engel's (1977) bio-psycho-social model, Bronfenbrenner's (1979) perspective of ecological systems, and Capra's (2002) perspective on the interdependence of psychological, biological, social, and cultural phenomena, termed the 'web of life,' all view humans in various constellations and as embedded within numerous networks of influence as catalysts for schema construction. Subsumed within the Positive psychology perspective is Bandura's (1977) focus on the social cognitive connection related to efficacy and self-talk; Erikson's (1968) psychosocial stages of development; and Festinger's (1957) emphasis on socio-emotional influences related to consistency and dissonance of constructed realities. These also play a role in the conceptual frame.

Human development research holds countless proofs that humans learn, develop and identify based on schemas of knowledge, beliefs, and expectations. Covitality is a measure of these positive self-and-other-schemas. Fundamentally, an individual constructs their idea of self, including their belief in their own capacity as a co-constructed process involving experiences and interactions with others. As such, each individual has the power to define and be defined by their experience. This research illustrates the interconnections between achievement and competency related to non-cognitive/psycho-sociological measures, asking whether covitality and personal effectiveness measures correlate with academic achievement, as evidenced by higher GPA.

Taking the Constructivist building blocks, and looking through a Positive psychology lens toward the realm of education in the community college setting, allows researchers to better understand the role of psycho-social-emotional processes, represented by non-cognitive skills, in academic success and well-being. Using Positive psychology as part of the conceptual lens allows researchers to hold an overarching perspective that unites separate fields of work in a more interrelated and transdisciplinary way (Peterson & Park, 2003). Examining educational institutions through this psychological framework has opened a gap in educational research that psychotherapeutic research may help fill. Extending the scope of Positive psychology from counseling to the classroom produces additional research that strengthens the body of literature relevant to human thriving and flourishing within the embedded systems in which we are all contained (Wright, 2003).

This researcher believes that Positive psychology captures these ideas, supposing that a view of human functioning requires a view of human systems, and suggesting that experiences of well-being and distress impact individuals on two different and separate continua, reinforcing human behaviors regarding these strengths or deficits, respectively. Positive traits, specifically character strengths, are identified and categorized within this theoretical model. Furthermore, Positive psychology focuses on experiences between and among individuals and institutions (families, schools, communities, governments, nations, and global interrelationships) so it is a fitting conceptual lens with which to explore the development of 21st century skills.

This perspective implies that science from psychology may be the most useful tool to support development within other systems--more specifically, the system of education. While in-depth exploration of each of these theories is outside the scope of this study, it is imperative to understand the interconnections of the multiple systems involved, and the complex processes that

support academic success. Chapter Two highlights research in the field of social science and education, linking these fields to the co-constructive process of individual and institutional influence related to schema construction and reinforcement. Using Positive psychology to bridge the gap between psycho-therapeutic research and education, it will also incorporate covitality research as it applies to schema construction in education to emphasize the non-cognitive skills required in the 21st century workforce.

Psychological constructs must be linked into education for successful transformation. This study engaged Positive psychology in a transformative effort to examine how covital and other non-cognitive mechanisms impact the performance measure of academic success through student GPA. Refocusing assessment on multi-factorial clustering of strengths allows researchers to consider educational experiences that support developmental aspects related to the co-created process of knowledge building, including the non-cognitive skills related to one's construction of positive schemas.

This researcher is inspired by the knowledge that Positive psychology in education hearkens to historical educational roots reaching deep into strengths and value-laden lyceum learning and Socratic dialogues of character building within ancient philosophies and academia. Aristotelean leanings into the essence of one's spirit is a historical foundation of Positve psychology (Pursuitofhappiness.org, 2016). Drawing on these philosophical roots and emphasizing the dialogic and co-creative act of knowing, returns educators to the role of instructor/mentor/teacher/co-creator. They are then positioned to positively influence a student's schemas, therefore impacting a student's self-concept of their own non-cognitive skills. This approach to learning allows an epistemological instructional effort targeting covital co-

construction in higher education, truly preparing students for the 21st century workforce through the emphasis on these non-cognitive skills.

From Positive psychology research, a construct called *covitality* emerges (Furlong et al., 2013). Covitality, the co-occurrence of strengths, specifically relates to the strengths and values identified and defined within Positive psychology. Twelve specific strengths, called positive self-schemas, are assessed in four broad categories: Engaged Living (EL), Emotional Competence (EC), Belief-in-Others (BiO), and Belief-in Self (BiS). Covitality is established within inter-personal and intra-personal experiences, within social interactions, emphasizing the constructivist's assumptions regarding schema creation, and making it a fitting construct to examine within the community college setting. If every word or action offers participation in one's own schema-development, then every word or action has the power to transform those schemas. A potent first step is to survey the strengths, in order to catch a glimpse of the student's self-conception of these skills. The emphasis on cognitive skills within higher education, where schemas and mental models are being impacted by the learning experience, demands that non-cognitive skills are examined, as well. This focus supports and better defines success throughout domains (academic, professional, personal).

Covitality research has found that subjective well-being is correlated with strengths that are impacted through normal developmental tasks related to exchanges that reinforce or diminish definitions of self (Renshaw, Dowdy, Furlong, & Strom, 2014). As the developmental process occurs, individuals build schemas within which each organizes their own sense of self, world, and place in the world. This narrative is dependent on covital factors, which "foster[s] positive development and protect against psychological distress" (International Center for School Based

Youth Development, 2016, para 6). Self-assessment measures can reveal these schemas in the form of psychometrics.

Furlong and other researchers associated with the International Center for School Based Youth Development at the University of California, Santa Barbara, initiated and conducted years of research on the psychometrics of covitality, culminating in the development of social emotional health surveys (SEHS), more recently adapted to post-secondary education settings (Furlong, Shishim, You, & Dowdy, 2017; You, Furlong, Dowdy, & O'Malley, 2014). The statistical importance of this background literature and the empirical evidence of the associated constructs within each domain, explored in detail within the next chapter of this dissertation, allow the conceptual frame of Positive psychology to link covital construction to self-schemas. Additionally, this conceptual framework highlights co-creation of schemas as possible through mindset research, bringing 21st century skills back to the forefront in higher education.

Referencing the workforce skills listed in this chapter, several include mindset orientations, specifically growth mindset orientations. Using Dweck's (2006) growth mindset work, as it relates to *learning power* (Claxton, 1999, 2002; Claxton, Chambers, Powell & Lucas, 2011; Claxton & Lucas, 2015), interconnects the socio-emotional schemas built within education, and informs a student's experience. Instruction that impacts those self-schemas and experiences allows for co-construction and intentional learning, enhancing learning power and emphasizing strengths and skill development, specifically in the area of non-cognitive skills building, in high demand as the 21st workplace evolves.

The possibility that 21st century non-cognitive measures are associated with academic and professional success prompts a worthwhile exploration. Constructing schemas, informed by these theoretical frames, becomes the pivotal point for exploration. Applying Positive

psychology to the education system empowers this institution to further manage the work that has been increasingly placed within its purview. Whether or not it is popularly accepted, community colleges seem, now more than ever, to play a social role in enhancing skills: academic, developmental, professional and personal skills, alike. This researcher proposed that the most effective way to impact these skills, catalyzing transformation, is through the identification and measurement of non-cognitive strengths.

Positive psychology's strengths-based perspective, represented by the term covitality, is measured with the Social Emotional Health Survey (SEHS) which assesses positive psychological constructs and is empirically supported as contributing to positive mental health. Studies reveal correlations between positive mental health and better academic performance, along with more successful functioning across multiple domains (Komarraju, Ramsey, & Rinella, 2013; Robbins, Lauver, Le, Davis, & Carlstrom, 2004; Zimmerman & Kitsantas, 2014). Covitality scores, as measured by the SEHS, are associated with multiple quality of life measures (Furlong et al, 2013), as well as achievement outcomes in student performance (Seligman, Ernst, Gillham, & Linkins, 2009; Zins, Bloodworth, Weissberg, & Walberg, 2007). This line of research recognizes the importance of covitality as an internal developmental asset, and as a new focus toward strengths-based assessment that can complement the traditional assessment procedures that identify students' deficits and problems (Nickerson, 2007) in 21st century education.

As school leaders attempt to reduce psychological risks and raise academic equality through policy and practice, strengths and wellness promotion has not been readily explored (American Psychological Association, 2013). Exploring covitality's place in higher education has arrived, as 21st century skills demand psychological assets required for managing and coping

with life challenges. Covitality has been absent from curriculum in the educational systems within which much of western civilization is socialized. Issues related to non-cognitive processes, such as self-awareness, empathy, efficacy, resilience, attribution and meaning-making are clearly impacted by the reflexive developmental processes (Stuart, Lido, & Morgan, 2011; Thorne, 2004; Tough, 2012; Ulriksen, Holmegaard, & Moller, 2013; Wolters, & Benzon, 2013; You, Ritchey, Furlong, Shochet, & Boman, 2011; Zins et al., 2007; Zozakiewicz, & Rodriguez, 2007). Highlighting the significance of these non-cognitive processes makes them useful to examine in the realm of higher education, as a transformative next step (See Figure 1.2).
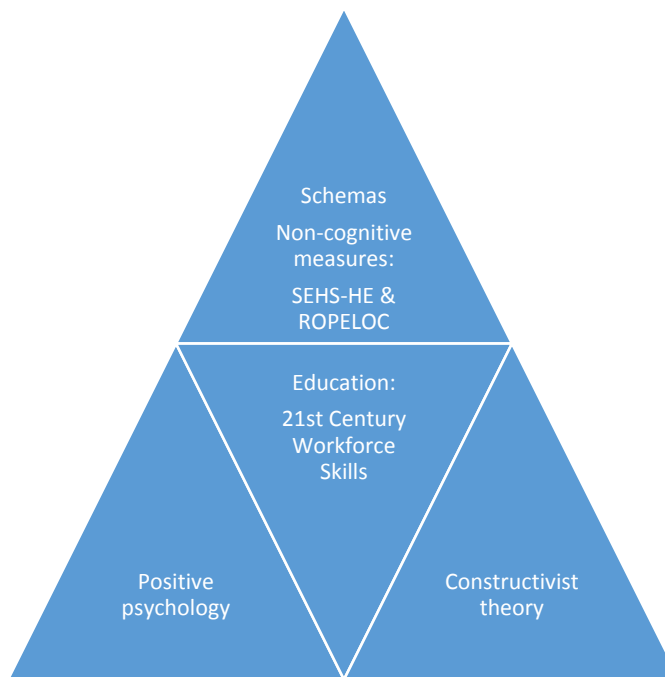
Figure 1.2. Conceptual Framework: Positive Psychology from Counseling to Classroom.

Rebecca A. Martin, 2018.

Assumptions and Limitations

This research is based on the possibility that Positive psychology can support the creation of positive institutions where positive experiences can promote positive traits in the form of

specific non-cognitive skills. These can foster success for students, academically and personally. It is important to acknowledge that the Positive psychology approach in education will require attention to the convergence of multiple, diverse areas of literature touched upon in this research. However, dimensions of this approach are outside the scope of this study, such as identity, self-esteem, motivation, relational and belonging research. This researcher reviewed self-assessment scores on two instruments measuring non-cognitive skills (dependent variables) and statistically analyzed these constructs evaluating them against GPA as a measure of academic performance (independent variable). This analysis supported an understanding of the non-cognitive skills that are a component of the educational process within a rural Maine community college. Findings may lead to curricular improvements that incorporate explicit teaching of non-cognitive skills in order to prepare students for the 21st century workplace. The instruments will be defined and explored in greater detail within the literature review section of this dissertation.

An area of concern with this study continues to be correlative versus causative variables. The examination of the relationships between and amongst these measures is only one step in a process of analysis that brings psycho-social research into the realm of education. Questions related to dissonance, personal bias, subjectivity of self-report, and social desirability of answers create questions regarding the reliability of self-assessment research; despite this, this researcher believes that the phenomenological self-assessment surveys are the most direct ways to gain insight into the internal processes involved in the schemas related to these non-cognitive measures. Many studies in this area are built with mixed methodology (Ahern, 2017; Dai, Swanson, & Cheng, 2011; Kaplan, 2017; Levi, Einav, Raskind, Ziv, & Margalit, 2013; Mertens, 2014; Pluye & Hong, 2014), examining the quantitative and statistical correlates of specific psycho-social constructs, along with the qualitative and narrative-based meaning making

mechanisms in story creation (Furlong, 2015; Jones, 2011). While this researcher did not delve into the qualitative case study or interview process, future research may build on the quantitative analysis found here.

The terms used to describe these non-cognitive covital skills vary across fields. Different disciplines may identify a specific construct and associate it with a specific operational definition. This may pose significant limitations in applying research terms across fields. For instance, one study may use the term *grit* while another uses the term *persistence*, one study may use the term *belonging* and another may use the word *connection*. Though the terms used may differ, in general the concept described is operationally similar. These terms are identified as dynamic traits that represent complex schemas related to self and others, the operationalization of the definitions used in this research will be found in the definitions of terms section.

An important goal of this research was to study specific factors and conditions that lead to increases or decreases in these traits, for example using these measurements before and after an experience to identify whether the experience can be considered as a causal influence. The complex interrelationship of non-cognitive strengths captured within covital constructs and personal effectiveness measures creates some difficulty regarding the psychological processes and causative origin of these skills. The specific groupings of strengths or covital clusters revealed patterns for which the cause is not immediately clear, making it difficult to identify the co-constructive variables at play. Each cluster, however, does support possibilities for change and for impacting student success within higher education; moreover, the alignment of 21st century workforce skills with community college education is preliminarily examined.

A final limitation and assumption guiding this research is necessary to communicate. There is a gap in the research focusing on college-aged students, and specifically the non-

tranditional demographic of community college students. Much of the developmental and psychological asset work has focused on elementary or high school-aged populations (Kielty, Gilligan, Staton, & Curtis, 2017; Timofejeva, Svence, & Petrulite, 2016). This researcher presumes that the significant results of these strengths-based psychometric and social emotional learning studies are relative to humans across the life span and across educational age and grade.

Though these psycho-social assets impact ideas as diverse as identity, happiness, morale, motivation, and other psychological processes which have been studied and operationalized differently across disciplines and fields, this study merely aimed to identify the non-cognitive clusters present within the community college population in a rural Maine setting. It does not claim causative forces. This quantitative study examines students' self-report measures of covitality and personal effectiveness, thereby glimpsing into students' organizing heuristics regarding these skills, and assessed how these non-cognitive aspects of learning were related to student performance, via GPA. Methodology is explored in more detail in Chapter Three.

Significance

This researcher proposed that the most effective way to impact these skills, catalyzing transformation that will meet the needs of the 21st century workforce, is through the identification and cultivation of non-cognitive strengths, such as are found in covitality and personal effectiveness measures. The purpose of this study was to quantitatively assess the relationship among non-cognitive 21st century skills, as measured by the SEHS-HE and ROPELOC instruments, and academic performance, as measured by GPA. This was accomplished through quantitative assessment of electronically administered questionnaires, and further statistical correlational analysis. The study was driven by Positive psychology research focusing on the construction of schemas reflected in strengths assessment, as a representative

core concept for non-cognitive strengths necessary for workforce success in the 21st century. The evolving priorities and expectations within the community college educational system have centered on deficit identification (Henry, Svence, & Petrulite, 2016; Kauffman, Hallahan, Pullen & Badar, 2018; Meltzer, 2018); however, an exploration into strengths and values identification may be a pivotal inroad leading educators to support educational objectives through psycho-social and emotional skills-building.

Features related to non-cognitive strengths could significantly enhance personal and professional performance, life satisfaction, sense of subjective well-being and may reverberate through multiple levels of individual and organizational systems, if better understood and endorsed (Bannister & Fransella, 1986; Bass, 1998; Bass & Steidlmeier, 1998; Fuller, Morrison, Jones, Bridger, & Brown, 1999; Kets de Vries, 2001; Schachter, 2005; Schueller, 2009; Schlenker, 1985; Speitzer, Kizilos, & Nason, 1997). Cultivating psycho-social understanding, developing non-cognitive skills, encouraging covital development, and gaining insights into positive schema construction can support practices within the community college context. Transformation through strength identification should become a normative mechanism of an educators' practice, as the demands on higher education, workplace performance, and positive psychological functioning are now buoyed by neuroscience and psychometrics (Brown, Lomas, & Eiroa-Orosa, 2017; Elliot, Dweck, & Yeager, 2017; Fredrickson & Joiner, 2018; Shiota, Campos, Oveis, Hertenstein, Simon-Thomas, & Keltner, 2017; Shogren, Wehmeyer & Singh, 2017). Positive psychology relates individual traits to reflexive experiences in social institutions, thereby highlighting all the systems involved when one system transforms, and suggests that positive institutions create positive experiences within which positive individual traits can be developed (Diener, Seligman, Choi, Oishi, 2018; Duckworth & Seligman, 2017; Park &

Peterson, 2008; Seligman, 2018; Seligman, Ernst, Gillham, Reivich, & Linkins, 2009; Wright, 2017).

Audiences that will benefit from this study include members of organizational systems within community colleges and all relevant stakeholders and constituents. These include: the individual student, student communities, faculty, and the larger communities and family systems in which the college is embedded, specifically employers and financial patrons. If college leaders can align theory and practice, providing an education that results in the skills required in the workplace, the value of such an education can be evidenced-based and rooted in strengths-development. Ensuring that students are graduating with the non-cognitive skills required by the 21st century workforce reflects the capacity of this workforce readiness institution to do what it is designed to do, preparing students for their future employment.

This researcher believes that community colleges are uniquely positioned to serve diverse students with non-traditional demographics and experiences, and charged with a training and skill-development purpose in the workforce and education socialization process. Community colleges will benefit from a more psychotherapeutic orientation toward non-cognitive skills, such as an understanding of the non-cognitive components of covitality, that can transform students into learners ready for the 21st century workplace. Using a psychotherapeutic frame, specifically, a Positive psychology lens, to measure covitality and other non-cognitive skills of community college students, becomes an important next step in the education of the students who arrive at the doorsteps, real and virtual, of American community colleges.

Definitions of Terms

This research borrows ideas from multiple disciplines. Psycho-social terminology, as well as developmental and educational constructs, are defined below. Though these terms may be

used interchangeably with other terms within the multiple disciplines, as are many within the covital constructs historically studied, a consensus and regularity in terminology and usage is important.

21st Century Workforce Skills: The Partnership for 21st Century Skills defines these as essential strengths required for success in the technological and sociological systems of today's world. These are considered non-cognitive learning and innovation skills, and are required to prepare a student for the complex life and work environments in the 21st century with a focus on creativity, critical thinking, communication, and collaboration (P21, Framework Definitions, 2009).

Active Involvement (AI): A domain within the Review of Personal Effectiveness scale, measuring the continuum of action and energy used to make things happen.

Belief in Others: A domain within the Social Emotional Health Survey, comprised of school support, family coherence, and peer support.

Belief in Self: A domain within the Social Emotional Health Survey, comprised of self-awareness, self-efficacy and persistence.

Co-construction: in Educational theory, co-construction accepts that learning is an active, interpretative, and constructive process where mental structures are (re)organized in the process of reality construction. This activity of learning, rooted by symbolic interactionism (Mead, 1934) and sociocultural theory (Vygotsky, 1962) is not only through direct personal

experience, but is shaped through the social interactions and experiences that are socially shared (Reusser, 2001).

Co-creation: a term to be used synonymously with co-construction within this study.

Cognitive Skills: Cognitive skills can be considered as the "skills developed through schooling, usually in content areas such as mathematics and English language arts that are readily measured with standardized tests" (Kyllonen, 2012, p. 4).

Community Colleges: defined as "any institution regionally accredited to award the associate in arts or the associate in science as its highest degree" (Cohen & Brawer, 2008, p. 5).

Cooperative Teamwork (CT): A measurement within the ROPELOC instrument representing cooperation in team situations.

Coping with change (CH): A measurement within the ROPELOC instrument representing the ability to cope with change.

Covitality: the co-occurrence of specific strengths found together in patterns significant enough to be measured psychometrically. Covitality relates to the patterns of twelve co-occurring psycho-social strengths, called positive self-schemas, and are assessed in four broad categories: Engaged Living (EL), Emotional Competence (EC), Belief-in-others (BiO), and Belief-in self (BiS). Furlong et al. (2013) specifically describes

> …core psychosocial strengths-based on a higher-order model that consists of four
>
> latent traits (each comprised of three measured subscales): belief-in-self (with
>
> subscales of self-efficacy, self-awareness, and persistence), belief-in-others (with
>
> subscales of school support, peer support, and family coherence), emotional
>
> competence (with subscales of emotional regulation, behavioral self-control, and

empathy), and engaged living (with subscales of gratitude, zest, and optimism)...

(p. 3)

Covitality Scale: Is a composite sum of four domains and 12 psychometrics within the Social Emotional Health Survey-Higher Education (SEHS-HE).

Dual-Factor (model) / Two Continua Model established by Keyes (2005; 2009) helps to support a Positive psychology focus on the two continua of functioning (deficit and strength) – specifically, how each may impact the construction of one's own meanings. The *dual-factor* model of mental health proposes a two-continuum classification conceptualizing mental illness symptoms and mental wellness indicators as co-occurring and not mutually exclusive. It proposes that complete health can only be understood by evaluating both successful and distressed functioning. The Positive psychology approach supports a dual-factor model as a way to describe wellness as more than the absence of illness or pathology, rather wellness is built upon strengths and *virtues* (Kia-Keating, Dowdy, Morgan, & Noam, 2011; Peterson & Seligman, 2004).

Ecological Systems (theory): refers to the different domains of functioning with which an individual interacts across their development, creating self-schemas based on experiences. It is an approach to the study of human development that consists of the

scientific study of the progressive, mutual accommodation, throughout the life

course, between an active, growing human being, and the changing properties of

the immediate settings in which the developing person lives, as this process is

affected by the relations between these settings, and by the larger contexts in which the settings are embedded. (Bronfenbrenner, 1989, p. 188)

Emotional Competence: One of four domains, comprised of specific combinations of psychometrics related to non-cognitive strengths within the Social Emotional Health Survey- Higher Education (SEHS-HE).

Emotional Regulation: Non-cognitive character strength in combination with empathy and self-control within the Emotional Competence domain of the Social Emotional Health Survey-Higher Education (SEHS-HE).

Empathy: Non-cognitive character strength in combination with emotional regulation and self-control within the Emotional Competence domain of the Social Emotional Health Survey-Higher Education (SEHS-HE).

Energy scale (Active Involvement): Non-cognitive measure within the ROPELOC representing amount of energy used to get things done.

Engaged Living: One of four domains within the covitality scale, measured by the SEHS-HE, comprised of Optimism, Zest, and Gratitude.

Ethos: the "quality and character of school life, including norms, values and expectations" (Aldridge, Ala'i, Fraser, & Fozdar, 2015, p. 31) which serve to create (physical, emotional, social) safety across domains with mutual respect and sense of connection. An examination of ethos in the educational setting includes analysis of a student's meaning-making model, "in which culture plays an important role in the development of psychological functions" (Zozakiewixz & Rodrigues, 2007, as cited in Aldridge, Ala'i, Fraser, & Fozdar, 2015, p. 32). The

consequence of this is a reinforcement of the three pillars of Positive psychology: positive traits, positive experiences, and positive institutions.

External Locus of Control (EL): Non-cognitive trait measured within the ROPELOC; the measure represents the level a person accepts that external issues control or determine success.

Family Support: Within the Social and Emotional Health Survey hierarchical covitality model, Family Support is related to Family Coherencce and is a part of the Belief-in-Others domain.

Gratitude: Within the Social and Emotional Health Survey hierarchical covitality model, gratitude is a non-cognitive character strength, assessed in combination with Optimism, and Zest within the Engaged Living domain.

Habitus: defined as "people's patterns in thought, beliefs, behaviour [sic] or taste" (Stuart, Lido, & Morgan, 2011, p. 490)

Identity: according to the American Psychological Association, is

…often used to refer to the self, expressions of individuality and the groups to which people belong. Our identities define us because they contain personality traits and highlight social roles, and they can be focused on our past, present and future selves. (APA, 2017, p. 1)

Identity anchors: trait related aspects of identity. Positive psychology suggests that these trait components are measureable.

Identity-capital/ Psychological capital: specifically focuses on how non-cognitive identity constructs impact well-being. Identity/Psychological capital are considered as protective features of identity, or the reserve from which to draw when ambiguities or incongruences occur

within our experiences. Many Positive psychology constructs have been called positive *identity capital* (Burrow & Hill, 2011). The identity capital model hypothesizes that

> …a stable sense of self facilitates individuals' ability to negotiate everyday experiences by enhancing their recognition of obstacles and opportunities most relevant to them. Identity capital, then, represents aspects of who one is that can be invested to successfully navigate key tasks and to capitalize on experiences. (Burrow & Hill, 2011, p. 1196)

> **Inter-learning:**

> …denotes a process wherein learners co-discover and co-create what is learned from within their physical, linguistic, and social-organizational situatedness. In other words, inter-learning denotes learning that is organizationally facilitated (with greater or lesser degrees of formal structure) among dynamically related agents in the process of mutual, creative beginning. (DeRobertis, 2017, p. 38)

This inter-learning is represented by Positive psychology's perspective that self-schemas are formulated and can become non-cognitive traits, based on experiences within institutions.

Internal Locus of Control (IL): ROPELOC measure assessing the non-cognitive tendency for taking internal responsibility for actions and success.

Leadership Ability (LA): ROPELOC measure assessing leadership capability.

Learning Power: developed by Claxton (1999, 2002) and expanded upon by Claxton et al (2011). "Learning power is an active process that invites students to become engaged learners and agents by doing and learning about things that are meaningful to them, and by encouraging students to persist in learning things that are difficult" (Lewis & Winkleman, 2017, p. 34).

Learning power exists within growth mindsets, and is rooted in the understanding of co-created learning and the scaffolding process related to schema formation.

Meaning Making: in this context, is borrowed from constructivist theory, which highlights the multiple realities constructed through phenomenological interpretation:

People impose order on the world perceived in an effort to construct meaning; meaning lies in cognition not in elements external to us; information impinging on our cognitive systems is screened, translated, altered, perhaps rejected by the knowledge that already exists in that system; the resulting knowledge is idiosyncratic and is purposefully constructed. (Krauss, 2005, p. 760)

Using this definition of meaning making, one can begin to see that there are both cognitive schemata and non-congnitive schemata.

Mindset: conceived as impacted by development and discourse. The importance of mindset research resontes with 21st century workforce skills. Lewis and Winkleman (2017) apply mindset work to transformational education movements and describe the construct in the following way:

…The 'mindset' construct emerged from Carol Dweck's (2006) research regarding successful learners; students with growth mindsets see their minds as muscles to be exercised and developed, whereas fixed mindsets see their brains as limited to what they were born with or the way it is. (p. 2)

Non-cognitive skills: Non-cognitive skills are "all other skills developed through schooling that are not reflected in cognitive test scores.... Sometimes non-cognitive is confused

with personality, but non-cognitive is intended to be a broader term, with personality perhaps being a part of non-cognitive skills" (Kyllonen, 2012, p. 4).

Open Thinking (OT): ROPELOC measurement of a respondent's 21st century skills related to openness and adaptability in thinking and ideas.

Optimism: Non-cognitive strength measured in combination with Zest and Gratitude, within the Engaged Living domain, on the SEHS-HE of the covitality model.

Organizational skills: a ROPELOC domain constructed through the 21st century traits of Time Management, Quality Seeking, and Coping with Change.

Overall Effectiveness: ROPELOC measurement of a respondent's measure of overall effectiveness in all aspects of life, signified as (OE).

Peer Support: In combination with Family Coherence and School Support, this character strength comprises the Belief-in-Others domain, on the SEHS-HE of the covitality model.

Persistence: Non-cognitive strength measured in combination with Self-Efficacy and Self-Awareness within the Belief-in-Self domain, on the SEHS-HE of the covitality model.

Personal abilities and beliefs: ROPELOC measurement of a respondent's 21st century skills related to Self-Confidence, Self-Efficacy, Stress Management, Open Thinking.

Positive psychology: "…is the scientific study of human flourishing, and an applied approach to optimal functioning. It has also been defined as the study of the strengths and virtues that enable individuals, communities and organisations [sic] to thrive" (The Positive Psychology Institute, 2012, para 60). The Positive Psychology Center (2016) indicates that Positive psychology fundamentally believes that "people want to lead meaningful and fulfilling lives, to

cultivate what is best within them, and to enhance their experiences of love, work, and play"

(p. 1).

Psychological Assets: Indicators of positive psychological functioning, such as life satisfaction and positive affect (Boehm, Chen, Williams, Ryff, & Kubzansky, 2015).

Psychological Capital (PsyCap): First developed in organizational psychology and explored by Luthans, Avolio, Avey, and Norman (2007). Psychological Capital was thought to be based on character traits such as hope, efficacy, resilience and optimism (HERO), but has subsequently been considered as a collection of positive capacities, using several constructs from psychology, which are trainable and have significant effects on outcomes.

Quality Seeking (QS): ROPELOC measure related to 21st century workforce skills, representing the effort put in achieving the best possible results.

Review of Personal Effectiveness with Locus of Control (ROPELOC): a newer version of the Life Effectiveness Questionnaire (LEQ) developed through psychometric testing and design (Richards, Ellis, & Neill, 2002). This instrument measures psycho-behavioral domains and noncognitive skills related to life effectiveness, specifically designed for use in experience-based learning programs. The instrument includes the following components: personal abilities and beliefs (self-confidence, self-efficacy, stress management, open thinking); social abilities (social effectiveness, cooperative teamwork, leadership ability); organisational [sic] skills (time management, quality seeking, coping with change); an energy scale called active involvement (an engagement component) with locus of control and an overall effectiveness measures (Neill, 2009).

Scaffolding: In education, the term scaffolding, introduced by Jerome Bruner, a psychologist and instructional designer, refers to the process used to build on a student's

understanding, progressively leading the learner to greater independence in their own

knowledge. The support an educator gives to the student in building the schemas with which a

student will understand without assistance (The Glossary of Education Reform, 2015, para. 1).

Schema (Schemata): Schemas are mental models, heuristics, built to understand ideas.

Schema theory states "all knowledge is organized into units. Within these units of knowledge, or

schemata, is stored information" (Schema Theory, nd, California State University, Sacramento,

para. 2). This conceptual system is used by an individual in order to understand, and represents

the individual's knowledge about concepts: "objects and the relationships they have with other

objects, situations, events, sequences of events, actions, and sequences of actions" (Schema

Theory, nd, California State University, Sacramento, para. 3).

School Support: In combination with Family Coherence and Peer Support, this

character strength comprises the Belief-in-Others domain, on the SEHS-HE of the covitality

model.

Self Confidence (SC): ROPELOC measure related to 21st century workforce skills

representing confidence and belief in personal ability to be successful.

Self Efficacy (SF): ROPELOC measure related to 21st century workforce skills

representing one's ability to handle things and find solutions in difficult situations.

Self-Awareness: Non-cognitive strength measured in combination with Self-

Efficacy and Persistence within the Belief-in-Self domain, on the SEHS-HE of the covitality

model.

Self-Control: Non-cognitive strength measured in combination with Empathy and

Emotion Regulation within the Emotional Competence domain, on the SEHS-HE of the

covitality model.

Self-Efficacy: Non-cognitive strength measured in combination with Persistence and Self-Awareness within the Belief-in-Self domain, on the SEHS-HE of the covitality model.

Self-schema: in cognitive psychology, are cognitive structures individuals use to describe and organize knowledge about self. These are shaped by the various roles experienced throughout life, and influence the way an individual thinks and feels about self. "Our self-schema is produced in our social relationships. Throughout life, as we meet new people and enter new groups, our view of self is modified by the feedback we receive from others" (DeLamater & Meyers, 2011, p. 69).

Social Abilities: ROPELOC domain related to 21st century workforce skills representing strengths in Social Effectiveness, Cooperative Teamwork, Leadership Ability.

Social Effectiveness (SE): ROPELOC measure related to 21st century workforce skills representing one's competence and effectiveness in communicating and operating in social situations.

Stress Management (SM): ROPELOC measure related to 21st century workforce skills representing self-control and calmness in stressful situations.

Time Efficiency (TE): ROPELOC measure related to 21st century workforce skills representing one's strengths in efficient planning and utilization of time.

Zest: Non-cognitive strength measured in combination with Gratitude and Optimism within the Engaged Living domain, on the SEHS-HE of the covitality model.

Conclusion

This study explored the community college culture of strength enhancement rather than deficit identification, through the lens of Positive psychology, introducing and elaborating upon a Positive psychology perspective that emphasizes covital characteristics of successful academic

outcomes. Using these theoretical ideas in one conceptual frame and applying them to the realm of education reveals a gap in the body of research when relating mental health and psychotherapeutic components to the field of higher education. Improving the cognitive process is a duty of educators. It is widely accepted that cognitive schemas are built during this learning process. What of non-cognitive schemas? Are they also the duty of the educational system? If non-cognitive skills are what workplaces are seeking, then community colleges that hold themselves as work-force readiness preparatory grounds must attend to non-cognitive skills.

Though deficit models pervade research in education, the application of this conceptual perspective focuses on improvements through the identification and assessment of non-cognitive, covital factors and strengths relative to success in the 21st century workforce. A strengths and success promotion perspective can inform interactions and momentum toward thriving and flourishing traits, rather than labeling and pathologizing state-based deficits and issues. Success is not only the absence of deficits, but the embodiment of strengths through the challenges that students confront. Single trait theories regarding intra-psychic constructs related to human functioning and personality have confounded the literature of the illness ideology in psychology for the last century. Focus on multifactorial constructs and examination of these psychometrics within education, however, is fundamentally absent. The complex tapestry of students' non-cognitive processes are identified within this research, along with a statistical analysis framed by the expectations of the 21st century workforce.

Identifying useful non-cognitive measures, such as the SEHS-HE and ROPELOC, and examining how these psychological assets may be interrelated and indicative of success, can support clarification regarding the role of community college educations in workforce readiness. The deficiencies in educators' existing knowledge, and the prevalence of the deficit model

paradigm in education, limit discourse in the educational community college system about values and strengths, minimizing important non-cognitive skills in lieu of grades or prototypical academic content measures. The opportunities to enhance student success through these non-cognitive mechanisms are then lost.

Chapter One of this study provides an introduction to the topic and problem of practice. The purpose for the study was discussed and the research questions were outlined. A presentation of the conceptual framework of Positive psychology and 21st century skills with a preliminary literature review of the conceptual framework was also provided. Limitations and issues pertaining to the research, along with more substantial evidence regarding the need for research in this area was also offered. Chapter Two delves further into the literature, and provides both a historical and present perspective on the variables analyzed and questions asked. This literature review includes information regarding Positive psychology, Constructivist theory, schema formation, covital constructs, personal effectiveness, and 21st century skills. Chapter Two also addresses some limitations and delimitations regarding this study. Chapter Three provides a review regarding quantitative methodology, in particular the descriptions of the phenomenological experience, and the statistical processes used, along with an exploration of the transdisciplinary psychometrics relevant to the synthesis of research across fields. Methodology, including site and participant specifics will be examined, data collection procedures and a discussion of credibility, validity, and further questions follow. Chapter Four includes a presentation of the data collected and analyses completed. This dissertation concludes with Chapter Five, summarizing the findings of this study, exploring relevancy and concluding with a reflection on and discussion of the research. Bibliographic references and appendices follow.

CHAPTER 2

LITERATURE REVIEW

Social science has tried to quantify a successful life for nearly a century; and Positive psychology looks to ancient Aristotelian concepts of a life well-lived, rooted in philosophical traditions across the ages (Dahlsgaard, Peterson, Seligman, 2005; Park, Peterson & Seligman, 2004; Peterson, Park & Seligman, 2005). Bringing this social science perspective into the classroom is a pivotal part of educational transformation in the 21st century. This strengths-based psycho-social lens within the realm of education, though not new, is not widely applied. This chapter outlines the genesis of the Positive psychology's non-cognitive movement in education, providing a review of the literature in conjunction with the growing body of research. This literature review also frames the Positive psychology research with 21st century workplace skills. Aligning these ideas supports the need to identify these non-cognitive strengths within the graduating class of a rural Maine community college whose mission is to prepare their students for the workplace.

In addition to the review of literature related to Positive psychology, this chapter will examine covitality, a psychometric clustering of non-cognitive strengths. These strengths are considered self-schemas (Lee & Strom, 2014; Renshaw, Furlong, Dowdy, Rebelez, Smith, & O'Malley, 2014; You, Furlong, Felix, & O'Malley, 2015), and are measured with the Social Emotional Health Survey-Higher Education (SEHS-HE). The non-cognitive strengths related to personal effectiveness will also be examined, as representative of 21st century workforce skills. These personal effectiveness traits are measured with the Review of Personal Effectiveness with Locus of Control (ROPELOC) instrument (Richards, Ellis, & Neill, 2002). These instruments are related to mindset and non-cognitive skills relative to success in the workforce.

Positive psychology has developed a vocabulary and paradigm so strengths assessment can be done with more rigor in higher education. Psychometric analysis of quantifiable values and strengths begins to reveal the importance of applying this framework to education, where a growing number of individuals spend their time, after their K-12 learning. This non-cognitive framework within the democratizing institutions of community colleges embodies the Greek and Roman philosophical traditions on which Positive psychology is based. Said Socrates: "Education is the kindling of a flame, not the filling of a vessel" (Scharmer, 2018). This serves as a rebuke to the passive learner, and emphasizes the content of teaching. It conveys that teaching is a process, starting with the student, first. Teaching is not the passive pouring of information, rather, it supports active and individual learners' experiences with a teacher. This idea is similar to what is now called *co-created learning*.

Non-cognitive strengths are related to character traits (Dahlsgaard, Peterson, Seligman, 2005; Park, Peterson & Seligman, 2004; Peterson, Park & Seligman, 2005). Socrates held that his role as a teacher was to help "others recognize on their own what is real, true, and good" (Stanford Encyclopedia of Philosophy, Socrates, 2018, para. 2). This identification of values is an important theme. Positive psychology uses these philosophical roots to ground exploration in strengths-based theory, assessment, and practices around human development through self-assessment and introspection, reflection on self and others. This researcher modeled the methodology on this philosophy, asking students for a self-assessment of their schemas related to these non-cognitive strengths through the use of psychometric instrumentation.

Plato argued for *theory-construction* as a most useful educational device, emphasizing not the cognitive or content logic, but the non-cognitive and *inspired* aspect of progress. Strengths, values, and motivation are key to Plato's theories of human development. He urged

transformation through values, "taking to heart the greater reality" within forms and ideas: "…goodness, beauty, equality, bigness, likeness, unity, being, sameness, difference, change and changelessness" (Stanford Encyclopedia of Philosophy, Plato, 2017, para. 2). This study examined the non-cognitive schemas built to form and respond to this 'greater reality' through students' experiences, in order to emphasize strengths in alignment with the 21st century skills graduates require.

Positive psychology's social-emotional theories emphasize the importance of life experiences as part of an interactive, recursive process that co-constructs an individual's learning (Peterson, 2006; Peterson & Seligman, 2004; Watkins, 2015). This is much like Plato's *theory-construction* idea. Reflecting on these ideas may bring insights from the fields of social science to education. This is resonant with Dewey's pragmatic and progressive approach to education, which emphasizes that "We do not learn from experience. We learn from reflecting on experience" (Lagueux, 2014, p. xx). Self-assessment in reflection of these strengths begins to emulate the construction of self that Positive psychology asserts can be purposeful and trained, and of which the experience of education is a part. This chapter reviews these relevant historical and contemporary ideas in an effort to bring the philosophies and scholarship of social science research into the realm of education in order to transform the way educators consider academic success and workplace readiness.

Some research on the evolution of public education in the United States frames character and strengths development as an active socializing process played by academia. For instance, in response to the sociological and technological changes within John Dewey's lifetime (1859-1952) he formulated a progressive ideological emphasis on values based education:

…neither traditional moral norms nor transitional philosophical ethics were up to

the task of coping with the problems raised by these dramatic

transformations….To address the problems raised by social change, moral

practice needed to be thoroughly reconstructed, so that it contained within itself

the disposition to respond intelligently to new circumstances. (Stanford

Encyclopedia of Philosophy, Dewey, 2014, para. 1)

Dewey becomes relevant to this research because of the social change, technological drivers, and

moral practices confronting education at that time. The turbulence of change called for a

transformational approach to education. This research outlines some of the technological and

sociological drivers related to the need for another change in the 21st century.

For Dewey, a pragmatic approach to achievement of "moral progress and maturity" was

inextricably tied to reflection on values derived from social situations by social beings. He

grounded his works in developmental and social psychology (Stanford Encyclopedia of

Philosophy, Dewey, 2014, para 3). He emphasized socio-emotional learning, as his world

transitioned from the Civil War to the Cold War, from agriculture to industry, and from a rural to

an urban society. This researcher identifies the parallels in turbulence and supports the

recommendation that socio-emotional learning is required in the 21st century. Research cited

here highlights the technological and sociological changes driving a renewed need for

educational transformation.

Progressive education movements began in the 1880s, stressing "the emotional, artistic,

and creative aspects of human development" (Stanford Encyclopedia of Philosophy, Dewey,

2014, para 3). Reading the work of strengths-based progressive educators, from Greek

philosophers to Dewey, reveals that values and introspection are fundamental to the process of

education. The transdisciplinary and integrated perspective used in this study emphasizes this strengths-based and experiential learning. It also draws from the foundational learning theories and constructivist understanding of Piaget, Vygotsky, and Bandura, along with more modern work by Claxton (2002) and Dweck (2006). Each emphasizes non-cognitive skills learned and internalized through experiences in education. The non-cognitive values and strengths relative to success across these time periods reminds educators of the urgency to ensure these values are identified in times of turbulence and change. Dewey's call for transformation created progressive educational reform (Stanford Encyclopedia of Philosophy, Dewey, 2014). Today's educational leaders are calling for transformational reform (IFTF, 2011; MCCS, 2017; NWoW, 2014).

Emerging research (Komarraju & Nadler, 2013; Sawtelle, Brewe, Goertzen, and Kramer, 2012; Trujillo & Tanner, 2014) supports that these interrelated and complex processes are vital to transforming education. Each of these researchers emphasize the inclusion of and focus on non-cognitive skills related to life satisfaction, personal adjustment and human functioning in education. Komarraju & Nadler (2013) examine self-efficacy and motivational orientations, cognitive and metacognitive strategies that correspond with academic achievement. Sawtelle et al. (2012) analyze self-efficacy self-schemas and successful learning in physics, analyzing experiential and modeling instruction interventions, while Trujillo and Tanner (2014) consider the role of affect in learning, focusing on the learner's identity, self-efficacy and sense of belonging. Each of these studies focus on non-cognitive skills, strengths and traits. This research identifies non-cognitive strengths within community college students, supporting a better understanding of the relationships among non-cognitive constructs, personal effectiveness and successful academic performance within an institution with a mission of workplace readiness.

The Institute for the Future (IFTF, 2011) identifies the ongoing need for transforming education. Education needs to adapt to drivers of technological and sociological change relevant to the 21st century. These technological and sociological drivers include: 1) increase in life span, across the globe, changing the nature of learning and careers; 2) the rise of smart machines and systems automating processes causing a need for individuals to leave those positions and to engage social and collaborative interpersonal skills; 3) the emerging computational and programmable world, mandating systems, creative, and design thinking; 4) a new media ecology, requiring the ability to integrate and synthesize information from multiple sources; 5) social technologies creating super-structured organizations, demanding for the creation of value; 6) a globally connected world, increasing the level of exchanges and interdependence throughout the globe, necessitating an increasingly diverse adaptability to change, innovation, and research (IFTF, 2011).

A psycho-pedagogical epistemology reminds institutions of their role in facilitating non-cognitive skills as part of education in a "democratic civil society" (Stanford Encyclopedia of Philosophy, Dewey, 2014, para. 3). In so doing, education responds and adapts to the changes in the world through changes in experiences. Dewey is credited with saying: 'If we teach today's students as we taught yesterday's, we rob them of tomorrow.' This perspective becomes an emphasis not on content or curricular epistemology, but on pscho-pedagogy; on process and mindset changes. In other words, transformational effort emphasizes non-cognitive skills related not with what to think but with how to think.

Individual experiences and interpretation of these experiences simultaneously impact what is happening internally and externally, influencing how one sees a situation and one's self, in an iterative way (Ulriksen, Holmegaard, & Moeller, 2013; Wolters & Benzon, 2013).

Ulriksen, Homegaard, and Moeller (2013) describes this as "...a meaning structure that organizes events and human actions into a whole, thereby attributing significance to individual actions and events according to their effect on the whole" (p. 311). Wolters and Benzon (2013) describe it as an examination of beliefs and attitudes through self-assessment. Both begin to emphasize the importance of meaning structures and schemas, related to non-cognitive, affective strengths.

Utilizing a Positive psychology and learning theory framework recognizes that learners, at all ages, use prior experiences to accommodate new knowledge and create meaning making self-schemas (Erikson, 1968; Furlong et al. 2013; Duckworth & Seligman, 2017; Park & Peterson, 2008; Piaget, 1957; Seligman, 2018; Seligman et al., 2009; Wright, 2017). This supports non-cognitive emphasis as a way to transform learning in education. Instructors become transformational leaders in supporting the development of non-cognitive skills, traits and values within the context of higher education. Education systems must start "…exploring the positive core and bringing out the best possibilities for promoting learning power and well-being…" (Lewis & Winkleman, 2017, p. 13). This researcher uses Positive psychology as the connective thread to trace these integrated ideas, supporting the required 21st century skills. Leaders in the American education system can draw upon this body of work to meet the technological and socio-cultural changes so rapidly unfolding. This research applies this perspective to emphasize assessment of non-cognitive strengths, instead of the traditional focus in academia, on cognitive content competencies; this cognitive or curricular focus may inform and support a transformative shift toward successful outcomes.

Examining interpersonal and intrapersonal non-cognitive skills brings socio-emotional theories, related to learning and psychological strengths, into the classroom. In community colleges, where the goal of education is workforce readiness, a focus on the non-cognitive skills

required in the workforce should be emphasized. As mentioned above, emerging literature emphasizes psycho-social and emotional components relating social science's emphasis on better understanding meaning, performance, and success within the field of education (Bolden, Petrov, & Gosling, 2008; Bolman & Deal, 2008; Burns, 1996; DeRobertis, 2017; Dweck, 1999; Eacott, 2010). Community colleges provide a realistic and natural arena in which to examine these ideas.

Non-cognitive schemata associated with self-concept and the beliefs and attitudes about others has a place within educational assessment (IFTF, 2011; Kafka, 2016; Kyllonen, 2012; NWoW, 2014). These schemata serve as individual heuristics that organize and make sense of experiences. The research cited here highlights the importance of self as situated in connection to groups of others and within a reflexive learning experience. It is within experiences with others that humans work, play, live, and learn. Schema construction is conceptualized through a Positive psychology lens. Positive psychology research explores a focus on the strengths continuum of a dual-factor model, encouraging a perspective shift from the deficit model of problem-identification or symptom amelioration within the educational system to a strengths-based identification and assessment (Lee & Strom, 2014; Renshaw et al., 2014; You, Furlong, Felix, & O'Malley, 2015).

This application to education supports constructivist underpinnings through the emphasis that positive institutions can create positive experiences that create positive traits. Integrating this research provides a framework that supports the supposition that, as individuals develop they create and build on schemas, both cognitive and non-cognitive. Cognitive schemas are readily studied in education through curricular outcomes (Borg, 2015; Hennissen, Beckers, & Moerkerke, 2017; Tawfik, Rong, & Choi, 2015). Emphasizing specific experiences can influence the construction of effective schemas. Workforce research demonstrates the importance of non-

cognitive schemas (IFTF, 2011; Kafka, 2016; Kyllonen, 2012; NWoW, 2014). Non-cognitive schemas are not readily assessed as important to the field of education. Identifying non-cognitive schemas, through psychometrics, creates urgency for education transformation. A model of this researcher's framework is demonstrated below (See Figure 2.1):

Institutions
Positive Psychology
Traits
Experiences
Socio-Emotional Influences
Bio-psycho-social-spiritual systems
Constructivist
Meaning making schemas as interpretative lenses of experience
Cognitive (content) and Non-cognitive (applied) skills
21st Century Workplace readiness
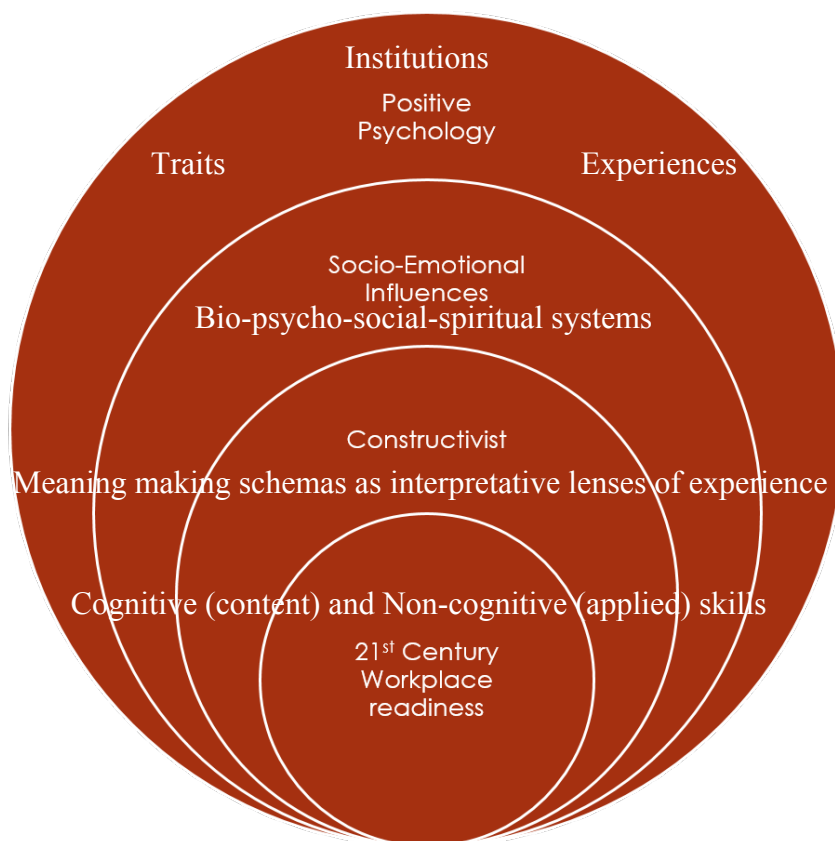
Figure 2.1: Covitality from Counseling to the Classroom: Conceptual Framework. Rebecca A. Martin, 2018.

Relevant Research

This section emphasizes relevant research supporting a non-cognitive, Positive psychology, approach to higher education. It summarizes existing research to ground the present study in resonant themes associated with well-being, values-based education, psychometrics, and the goals of this community college. Although evidence is drawn from seemingly disparate

fields, the transdisciplinary approach brings together connective threads necessary to measure and theorize student success in the process of higher education. This section reviews studies reflecting psycho-social-emotional single-trait and multi-factorial constructs. Emphasizing covitality is a specific way to measure non-cognitive strengths occurring in combination. This review of relevant studies presents covitality in the realm of education, looking at self-assessments as reflective of phenomenological self-and-other schemata. Finally, this literature review merges the frameworks presented in light of the requirements of a 21st century workforce. The framework supports innovation of these social science theories in service to an educational application, leading to this study's methodology section. The specific methodology is based on self-assessment as a way to demonstrate the psychometrics related to non-cognitive skills. The identification of non-cognitive strengths of graduating students in a rural Maine Community College allowed this researcher to determine correlates to academic success.

Positive psychology

Positive psychology draws from the psychological theories of person-centered psycho-social-emotional research related to Humanist psychology. Rogers (1902-1987), Maslow (1908-1970), and May (1909-1994), for example, provide individual, motivational, and developmental foundations rooted in positive regard, connection and needs fulfillment in areas of safety, belonging, and self-efficacy (Peterson, 2006; Peterson & Seligman, 2004; Watkins, 2015). For Humanists, these non-cognitive traits lead to an actualized or authentic life. Positive psychology adapts this Humanist approach, leaning on ancient philosophical roots and Aristotelian ethics of transformation of spirit, and advances through to modern cognitive neuroscience (Peterson, 2006; Peterson & Seligman, 2004; Watkins, 2015). New technologies have allowed researchers to *see* that values- and strengths-orientations impact the neuroplasticity of an individual's brain

(Seligman, 2015; Siegel, 2003; Siegel, 2009) leading to a branch of research in this field called Positive neuroscience (Howard-Jones, 2014; Immordino-Yang, 2015; Martin, & Ochsner, 2016). Research has shown that positive emotions and interventions can bolster health, achievement, and resilience, and can buffer against depression and anxiety. And while considerable research in neuroscience has focused on disease, dysfunction, and the harmful effects of stress and trauma, very little is known about the neural mechanisms of human flourishing (Positive Neuroscience, University of Pennsylvania, 2018, para. 1).

Positive psychology was created in 1998, born of Martin Seligman's 1967 studies of learned helplessness and its relationship to depression (Abramson, Seligman, Teasdale, 1978; Dweck, 1975; Maier & Seligman, 2016; Seligman, 2011). Thirty years after learned helplessness experiments, Seligman shifted focus from the diagnostic or deficit model to a strengths-based emphasis. He realized that learned helplessness is learned by an individual as a by-product of dynamics within a system. From this, he hypothesizes that, similarly, optimism can be learned (Seligman, 1967, 1998, 1999) as a by-product of dynamics within a system. This strengths-based emphasis on values identifies that positive schemas can be created and reinforced through experience, and serve as psychological assets to an individual across systems. These assets become psychological capital, or collections of personal traits that serve as protective factors and competencies that predict successful functioning. Learning experiences can reinforce or extinguish these socio-emotional-behavior patterns. As these psychological and sociological components are applied to education, the complex, iterative, process of learning begins to reveal the role of experience on schema creation and construction (Davis, 2018; Osher, Kidron, Brackett, Dymnicki, Jones, & Weissberg, 2016; Schmidt, 2018).

Positive psychology is also rooted in Social Cognitive psychology, inclusive of Bandura's Social Learning theory (1977), which addresses schema formation as a process of observational learning in one's environment, marrying behavioral and cognitive theories; and, Erikson's theory of psycho-social development (1968), which captures the experiential and epigenetic influences which play a role in the overlap between psychology and learning theory used within this study's conceptual frame. These social science ideas impart the role of the context and culture, or ethos, within the whole system. This perspective is necessary when evaluating success and outcomes measures (Kia-Keating et al 2011; Peterson & Seligman, 2004; Seligman, 2011).

Positive psychology's *whole system* framework, integrates what multiple disciplines have arrived at independently, over time. Keyes' (2005; 2009) dual-factor model helps to support the focus of these systems on two separate continua of functioning (deficit and strength) – specifically, how each may impact the construction of learning and self-schemas. Whole framework theories, such as Engel's (1977) bio-psycho-social model, Bronfenbrenner's (1979) perspective of ecological systems, and Capra's (2002) perspective on the interdependence of psychological, biological, social, and cultural phenomena (termed the *web of life*), are all views that support that humans exist in various constellations and are embedded within numerous networks of influence. According to Positive psychology, these systems become catalysts for schema construction that lead to successful functioning.

Positive psychology supposes that a view of human functioning requires a view of human systems. Human learning within a whole system framework impacts experiences, thusly performance, sense of subjective well-being, and sense of personal efficacy and success. Many researchers (Aldridge, Ala'I, Fraser, & Fozdar, 2015; Dowdy, Harrel-Williams, Dever, Furlong,

Moore, Raines, & Kamphaus, 2016; Jones, You, & Furlong, 2013; Micari & Pazos, 2012; Trujillo & Tanner 2014) propose that understanding these affective components may be the key to implementing promotive achievement strategies which can improve student outcomes in the field of education.

The implications for further research are clear, and to better understand the complex dynamics among these nuanced interrelated psycho-social, non-cognitive components, provides greater opportunity within community college education. A strengths-based, dual-factor, approach allows symptom amelioration *and* strengths building (Keyes, 2009). This dual-factor whole-system approach targets every student, instead of identifying those with deficits or who need remediation interventions. This can minimize stigma and create coherence and connectedness in experiences. Furthermore, Positive psychology focuses on interactions between and among individuals and institutions (families, schools, communities, governments, nations, and global interrelationships) in order to effect change across domains of functioning.

In summary, Positive psychology explores what creates successful living, and attempts to understand how strengths play a role in creating meaning and purpose, allowing for and cultivating positive traits through positive experiences in positive institutions. These positive traits are strengths that serve as psychological capital and are non-cognitive and socio-emotional, in nature. Positive experiences, including ideas such as subjective well-being, positive emotions, and level of engagement are primary foci in Positive psychology. Additionally, positive non-cognitive traits, specifically character strengths, are identified and categorized, supporting a values-based perspective (Peterson, 2006; Peterson & Seligman, 2004; Watkins, 2015). Applying this framework to education allows quantification of non-cognitive skills associated with success.

Positive psychology as 21st Century skills within Education

Positive psychology links positive traits to positive experiences in positive institutions. This section explores studies supporting these psychometrics and their relationship to academic, social and professional success. The identification of positive psychological assets correlated to psychological well-being and life satisfaction is a necessary part of academic assessment (Erhart et al, 2009). Dowdy at el. (2016), building on Ibrahim, Kelly, Adams, & Glazebrook (2013), found an increase in psychological distress within the college population while developing the assessment tool for non-cognitive strengths in education. They found that there is a 31% higher incidence rate of depression among college students compared to the general population (Dowdy et al., 2016). They then adapted the Social-Emotional Health Survey (SEHS), which was designed to measure covitality, in order to evaluate psycho-emotional traits of students in higher education. These psycho-emotional traits correlate with lower incidences of psychological distress, higher positive affective measures, better academic outcomes, and multiple quality of life measures (Dowdy et al., 2016; Furlong, Froh, Muller, & Gonzalez, 2014; Furlong, You, Shishim, & Dowdy, 2017; Jones, You, & Furlong, 2013; Kim, Dowdy, & Furlong, 2014; Timofejeva, Svence, & Petrulite, 2016). Furthermore, because community colleges function with a workplace preparation mission, an assessment of these psycho-social strengths can support identifying whether students are 21st century workforce ready.

This perspective implies that science from psychology may be the most useful tool to support development within multiple systems. More specifically, the system of education as it leads to the professional realm. While in-depth exploration of each of these theories, separately, are outside the scope of this study, it is imperative to understand the interconnections of the multiple systems involved, and the complex processes that support academic success.

Psychological constructs must be linked into education for successful transformation. In the 21st century, where technological and social drivers for change are pervasive, the study of optimal human functioning may provide insights into improvements in the multiple systems within which humans function. This study engaged Positive psychology to examine how non-cognitive mechanisms impact the performance measure of academic success through statistical correlation with student GPA.

Positive psychology forerunners compiled a strengths-based classification taxonomy (Peterson & Seligman, 2004). These researchers used psychometrics to synthesize socio-cultural, political, and religious texts in order to identify universally accepted core strengths. This project of values identification was called Values in Action (VIA) (Peterson & Seligman, 2004). VIA found six core virtues were expanded to reveal 24 non-cognitive strengths (see Figure 2.2). These are held as tenets of a life-well lived; and, historically held as character strengths necessary as standards of success in our daily experiences (Peterson & Seligman, 2004).
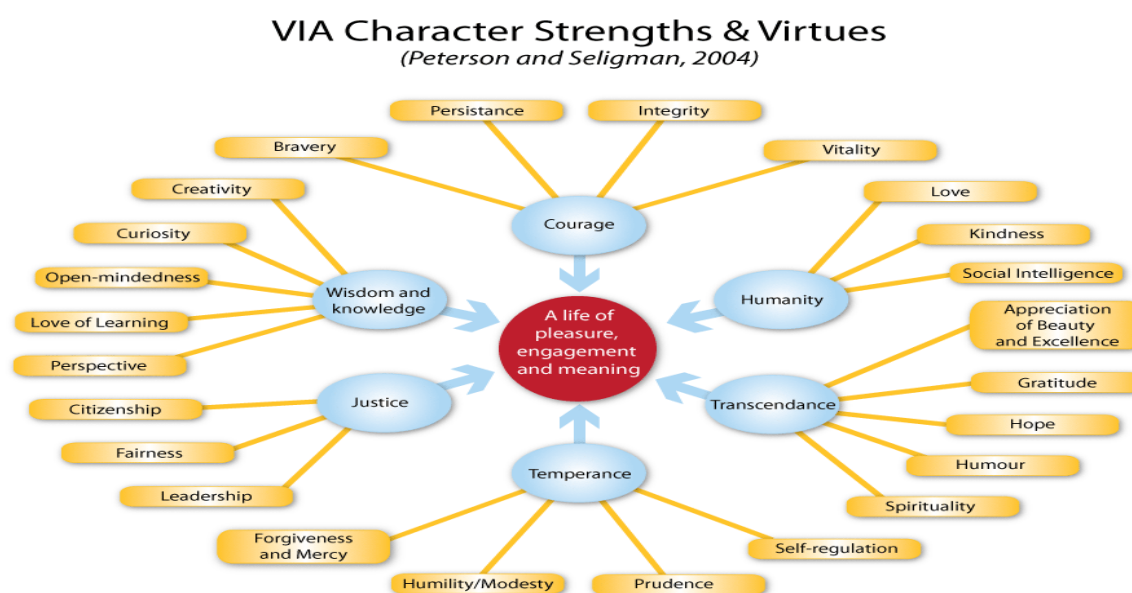
Figure 2.2: Vaules In Action (VIA) Character Strengths & Virtues. Peterson & Seligman, 2004.

From this list of strengths researchers engaged in psychometric and multi-factorial analyses, examining single-traits while appreciating how these strengths appear in combination (Furlong, Dowdy, Carnazzo, Bovery & Kim, 2014; Furlong, Gilman & Huebner, 2014; Renshaw, Furlong, Dowdy, Rebelz, Smith & O'Malley, 2014). This identification of strengths in combination has been enacted in separate fields. Organizational leadership fields and human resources management (Avey, Reichard, Luthans, & Mhatre, 2011; Luthans, Avolio, Avey, & Norman, 2007) reference strengths in combination, calling the combination of strengths *psychological capital*. Psychological capital research hypothesizes that the "combined effects of hope, optimism, self-efficacy, and resilience" (Jones, You, & Furlong, 2013, p. 512) predicts workplace success. Behavioral biology research (Weiss, King, & Enns, 2002) uses the term covitality, as well, "to describe the relations among positive traits of well-being, self-confidence, and general health" (Jones, You, & Furlong, 2013, p. 512). Strengths in combinations have been successfully measured and correlated across disciplines. Though there are some differences in terms, this research considers strengths in combination, clustered and measured, as *covital*.

This study examined experiences within graduates non-cognitive schemas and how these experiences impact covitality. Park and Peterson (2003) found that a positive group is related to positive morale. These groups foster positive traits, such as optimism, gratitude, grit, love. According to Park, Peterson, and Seligman (2004) covital traits determine individual well-being. Co-vital traits, also, are part of engagement and purpose measures (Peterson, Park, & Seligman, 2005). The social context is, in fact, often where social participation allows individuals to find pleasure and identify positive experiences (Bryant & Veroff, 2006). The whole system framework allows for this level of analysis.

Positive psychology's strengths-based approach to wholeness and well-being, borrowing from deep traditions and philosophies from around the world and throughout time, emphasizes non-cognitive values and strengths (Peterson, 2006; Peterson & Seligman, 2004; Watkins, 2015). Despite social sciences' strides in assessment, diagnosis, and treatment based in medical and pharmaceutical interventions, there had been little focus until recently on what is right and how strengths, values and learning impact positive human functioning. A disease model of human nature had created a deficit-focus, across disciplines, from medicine, to mental health, and even in the Western legal system (Pescosolido, 2013). This perspective lessens attention to flourishing and thriving. Because schools purport to have missions and values founded on the strengths-based guidance systems of Positive psychology, it is crucial that educational institutions research these areas. A strengths-based approach can "broaden educators' understanding of mental health and can inform reactive and proactive interventions that address problems and enhance strengths" (Moore, Widales-Benitez, Carnazzo, Kim, Moffa, & Dowdy, 2015, p. 253).

Promoting student success and well-being, using covital, non-cognitive measures, may lead to a decrease in levels of distress, while serving to foster thriving, optimal functioning, and academic improvements. Research supports the relationship between better social emotional functioning with connectedness (Appleton, Christenson, & Furlong, 2008; Rice, Kang, Weaver & Howell, 2008; You et al., 2008). Anderman (2002) and Rostosky, Owens, Zimmermen and Riggle (2003) provide fundamental research linking students' connectedness to academic performance. Diener and Seligman (2002), determined that good relationships with others are a necessary condition for individual happiness; and Peterson (2006) found that the psychological constructs relative to a good life include a sense of purpose and contribution within a social community. This wave of Positive psychology research introduced analysis of multi-factorial

psychometrics, including this new way to conceptualize clusters of strengths known as covitality. This study will specifically examine the combination of strengths defined by the Positive psychology covitality construct and the non-cognitive skills related to personal effectiveness as a way to discover the workforce strengths of the college graduates.

Moore et al, (2015) indicate "A strengths-based approach enhances the student's sense of empowerment and self-esteem" (p. 254). This approach has been noticeably absent from an academic outcome oriented educational system. They further argue that problem-focused screenings provide "actionable information" for only 15% of students identified as having problems (p. 254). This researcher acknowledges two significant concerns within this statistic: 1) the fraction of the students identified using problem-focused assessments are already identified through their own behavior or performance difficulties, and so are separated from their cohort; 2) the strengths of functioning are diminished and discounted, assessing student behaviors as deficit-based, rather than as a whole in which strengths may also reside.

Schema Construction VIA Positive psychology's Systems Approach

McVee, Dunsmore, and Gavelek (2005) summarize the importance of a systems approach in education, understanding how systems impact individual self-schemas through a mental, experiential and constructivist process. Multiple researchers examine sociocultural influences and social constructivism in relation to cognition (Au, 1998; Cole, 1996; Gavelek & Raphael, 1996; Spivey, 1997; Wertsch, 1991, 1998). Others, also, have examined the psychological and affective components of identity and self (Gergen & Gergen, 1983; Harré & Gillett, 1994). A combination of these ideas are not often applied in higher education. Combining the psycho-social and constructivist view emphasizes schema and scaffolding related to non-cognitive skills.

Schema construction practices are pivotal in framing this research. They highlight the individual socio-emotional, cognitive *and* non-cognitive processes related to learning and the construction of knowledge. Meaning-making, social interactions, and the situated or experiential role of learning within multiple socio-cultural and historical systems, are the focus of education, itself (Bell & Stevenson, 2015). Distinguishing between socio-emotional processes, cognitive processes, and learning outcomes may not be as possible as research in curriculum design and outcomes-based legislation assumes. The importance of schemas as organized mental models in cognition is clear; but, framing these non-cognitive heuristics within education requires innovation in application.

Though this research recognizes that Plato and Aristotle enacted teaching with an understanding of *non-cognitive* schemas, it also recognizes that the content and curricular outcomes are primary assessment tools. Non-cognitive measurements are not regularly applied in education. Certainly, they are not assessed as a matter of routine. Twenty-first century workplace skills involve both non-cognitive and cognitive processes, both content-based and applied skills. Identifying these skills in graduates becomes a necessary component of ensuring workforce readiness.

Vygotsky's (1962; 1978) zone of proximal learning, and Piaget's (1957) structural cognitive theory, describe the assimilation and accommodation process of schemas in building the scaffolding of individual knowledge. This framework is married to psychological research by Beals' (1998) emphasis on "essential social character" (p. 225) development within education. Brewer and Nakamura (1984) tie this study's conceptual framework to learning and psychology with their description of schemas: "In brief, [schemas] are higher-order cognitive structures that have been hypothesized to underlie many aspects of human knowledge and skill. They serve a

crucial role in providing an account of how old knowledge interacts with new knowledge in perception, language, thought, and memory" (p. 120). From this supposition, the researcher can suppose that non-cognitive schemas, are also constructed as higher-order structures, playing a crucial role in experiences of students within higher education.

This understanding is essential, as the higher order constructs that comprise non-cognitive self-schemas are part of covital and life effectiveness measures. Interpreting this research, one can assume that schemas are variables, embedded within one another. These intersecting variables represent knowledge at all levels (cognitive and non-cognitive) as active processes, mindset heuristics that evaluate incoming information and experience (McVee, Dunsmore, & Gavelek, 2005). These researchers note that "the implications for future inquiry turn critically on what we take schemas to be, how they are formed, and the processes by which they develop and are transformed" (p. 556). This understanding brings the discussion of philosophy and values full circle through learning and social science. It is covital, non-cognitive, schema analysis that has been undertaken in this research. This is done in an effort to transform and to redefine success in higher education. This study correlated non-cognitive covital and life effectiveness traits with GPA, framed by 21st century workforce skills. Applying these psychometric measures to the community college student population acknowledges the vital role well-being plays on performance in multiple populations.

As researchers continue to examine how positive self-schemas are formed and fostered (Norrish & Vella-Brodrick, 2009; Yates & Masten, 2004), this research focuses on the covitality domains related to positive self-schemas and their correlations with graduating community college students' GPA. The educational application capitalizes on the relevancy of both high and low scores. Identifying graduates lacking positive psychological self-schemas is indicative of

longitudinal correlates to problems with well-being, and personal and professional challenges (Boman, Mergler, & Pennell, 2017; Dowdy at el., 2016; Fullchange & Furlong, 2016; Kim, 2015; Lenzi, Furlong, Dowdy, Sharkey, Gini, & Altoè, 2015; Moore, Dowdy, & Furlong, 2017). Those scoring higher on socio-emotional, non-cognitive measures demonstrate correlations with longitudinal measures of positive or successful functioning and well-being, including a decrease in negative symptoms (Diener & Oishi, 2006; Diener & Seligman, 2002; Kielty, Gilligan, Staton, & Curtis, 2017; Wilkins, Boman, & Mergler, 2015).

Keyes (2006) suggests mental health is a combination of positive feelings which are used in real life situations and that reflect subjective psychological and social well-being. Research regarding mental health within the context of education has yielded multiple outcome impacts related to well-being on educational performance. Dowd, Furlong, and Sharkey (2013) found a link between lack of personal well-being and poor academic performance. Multiple studies correlate the SEHS survey with standard measures of well-being such as the Subjective Well-Being (SWB) Index (Long, Huebner, Wedell, & Hills, 2012), Student Life Satisfaction Scale (SLSS) (Huebner, 1991, 1995) and the Positive and Negative Affect Scale (PANAS) (Laurent et al., 1999). Though this study does not evaluate causation, the positive mental health self-schemas related to covitality, and the twelve psychological indicators that can be measured using the SEHS-HE, along with the four experiential learning measures related to the ROPELOC personal effectiveness measure, were evaluated in this community college context.

Furlong et al., (2016) further emphasize that this type of non-cognitive socio-emotional research provides theoretical and psychometric revelations that allow institutions to identify psychological assets while providing intervention and prevention strategies that will promote improvements of these strengths as development continues. As a matter of learning, these self-

schemas follow the graduates into the professional workplace realm. While both cognitive and non-cognitive abilities are relevant in education, there is a gap in research where psychology and education overlap. There is too little focus on the development and reinforcement of positive non-cognitive traits in the field of education. This study bridges the gap separating social sciences and education, not through the identification of psycho-social-emotional strengths, but by connecting these to workplace success.

Dual Factor Model

Research using self-schemas has traditionally focused on deficit-based, single continuum models, familiar to education. For example, Carlson (2001) examined self-schemas in relationship to depression; Pornari and Wood (2010) examined hostile attributions in education; and Calvete and Orue (2012) examined self-schemas as associated with justification of aggressive behavior. However, Positive psychology and the dual factor model identify that "just as self-schemas can contribute to negative developmental outcomes, it is increasingly recognized that the formation of adaptive self-schemas are associated with resilience" (Renshaw et al., 2014, p. 6).

Keyes (2007) presents a Positive psychological perspective on education by emphasizing a two-continua, or dual-factor, model of mental health. The traditional educational perspective considers psychological distress and positive functioning as being opposing poles of a single continuum. From this point of view, a reduction of psychological distress, including behavioral and emotional symptoms, is evidence of improvements in well-being or pro-social behavior. Although this intuitive uni-dimensional model of mental health is widely accepted, it fails to meet the needs of students in the 21st century (Keyes, 2007).

Positive psychology explores the dual-factor perspective in order to highlight that, though elements of distress and well-being may be related, these are separate continua (Keyes, 2007). Using this dual-factor model allows educators to consider that the presence of distress *and* the absence of well-being become significantly associated with impairments in academic performance (Suldo & Shaffer, 2008). This dichotomy allows an assessment of both positive and negative indicators of mental health, which has been used as predictive of attendance and achievement measures in student's experiences (Suldo, Thalji, & Ferron, 2011). As the traditional remedial model suggests that education is attending to symptoms of distress and performance deficits, the gap in educational research has been rigorous research assessing personal strengths and psychological assets, specifically related to higher education and workplace success (Caruso, Salovey, Brackett, & Mayer, 2015; Diener, & Tay, 2017; Dutton & Ragins, 2017; Robertson, Cooper, Sarkar, & Curran, 2015). There may be little educators can do with the presence of distress, but they may be able to impact the presence of well-being.

According to Renshaw et al. (2014):

The first phase of Positive psychology's work with youth (a) sought to identify

and assess isolated traits (e.g., gratitude, mindfulness, and hope)… and (b)

investigated the relations of these individual traits with each other as well as with

key quality-of-life outcomes (e.g., positive relationships, physical health, and

school achievement). (p. 3)

Student strength and student deficit models need to be considered as separate continuums to allow for a dynamic, process-based model that asks educators to incorporate a vital non-cognitive role in strengths identification within the learning process of their students.

Covitality

Seligman, Ernst, Gillham, Reivich & Linkins (2009), in their emphasis on the pillars of Positive psychology as interconnected influences related to positive traits, positive experiences, and positive institutions, brings Positive psychology further than theory, toward application, in education. By applying psychometrics, this study identified strengths as student's psychological assets, and identifies relationships between these non-cognitive strengths to student's GPA. This line of inquiry attempted to validate practices that can be integrated into institutional protocols to influence the multiple systems students exist within in order to create "psychologically healthy educational environments" (Huebner, Gilman, Reschly, & Hall, 2009, p. 565).

Where Seligman (2011) emphasizes strengths in combination related to positive emotions, engagement, relationships, meanings, and accomplishment (PERMA), simultaneous Positive psychology models have emphasized single-traits, risk and resiliency research (Scales, 1999), external and internal asset assessment (e.g. supportive others, and motivation and coping, respectively) (White, 2013) and covitality constructs (Furlong, You, Renshaw, O'Malley, & Rebelez, 2013) as predictive of academic success and well-being. Measuring single-trait strengths in combination has provoked conceptualizing new theoretical constructs, specifically, higher order constructs that identify traits in combination (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014).

The covitality construct (Jones, You, & Furlong, 2013) is identified as a specific clustering of strengths, occurring in combination. The *synergistic* impact of these single-traits, found together, has revealed non-cognitive psychological assets that are growing in their application in the field of education. With roots in Positive psychology and subjective well-being research, covitality researchers (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014;

Renshaw et al., 2014) have taken a developmental approach to the way individuals learn and become. This has yielded the identification of specific positive psychological constructs that are now being applied within the context of college student populations (Jones, You, & Furlong, 2013) where previous research primarily focused on youth, adolescent, or high-school applications.

According to these researchers, covital constructs are signs of positive psychological functioning (e.g. hope, optimism, self-efficacy, gratitude). As discussed above, covitality has been found to be positively associated with "optimal human functioning" and negatively associated with psychopathology, including mental illness (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014). These researchers examine covitality's relationship to psychological well-being and find that there is significant correlation among these constructs. The importance of the research begins to explain the importance of positive human resources and psychological assets, and how these resources may benefit college student populations, and ultimately, the workforce.

Covitality research integrates these ideas. Additionally, Aydeniz & Hodge (2011), Roth and Tobin (2007), Sfard and Prusak (2005), Fenwick (2004), Gee (2002), and Polkinghorne (1988) highlight learning, self-schemas, and developmental theory as it relates to psycho-social constructs. Research combining these approaches to address community college student non-cognitive performance is only just beginning. Emphasizing these non-cognitive skills should ideally center on the interface between self and institution, resulting in more effective personal, professional and academic measures of success. Similarly, understanding the nuances of the developmental processes involved in learning, has the the potential to transform the interconnected systems in which individuals are embedded.

The Positive psychology framework links the schema construction perspective to social institutions within which schemas are shaped, using a systems perspective to examine the interrelationships and combinations of non-cognitive skills and well-being, so central to success across at home, in school, and at work (Dahlsgaard, Peterson, Seligman, 2005; Park, Peterson & Seligman, 2004; Peterson, Park & Seligman, 2005). It is imperative to understand the intersections of the theories involved, and the complex processes that support the present study because the transdisciplinary nature of the foundations of dual factor assessment and research creates complicated roots for theory and rich sources for analytical application.

Furlong et al's (2013) initial studies in his meta-analysis of covital psychometrics reveals that covitality is a significant predictor of prosocial behavior, caring, acceptance, and connection in elementary school children. These socio-emotional and behavioral outcomes are related to positive traits (e.g. gratitude, optimism, persistence, etc.) measured by the Social-Emotional Health Survey instrument (Furlong et al., 2013). Simultaneous with Furlong et al.'s (2013) work, this research, using a Positive psychology perspective, has examined positive traits as positive self-schemas related to combinations of self-reported traits (self-efficacy, optimism, trust, worthiness). Additionally, findings reveal that these traits have a strong negative correlation to depression and anxiety and a strong positive correlation with resilience measures (Keyfitz, Lumley, Hennig, and Dozois, 2013). These initial empirical studies examining psychological assets in the educational environment justify applying measures of covitality in educational institutions, circling back to Seligman et al's (2009) proposal that positive non-cognitive traits are formed through positive experiences within positive institutions. Ultimately, this empirical approach has created an additional phase of Positive psychology research in education, namely offering pathways toward interventions and preventions designed to cultivate these traits

(Seligman, 2018; Seligman et al., 2009). While this intervening approach is hopeful, it is outside

the scope of this research, which seeks to identify the strengths within the college population as a

starting part for additional research.

The conceptual framework guiding covitality research, and the non-cognitive traits

combined in this higher order construct can be reviewed below (See Figure 2.3).
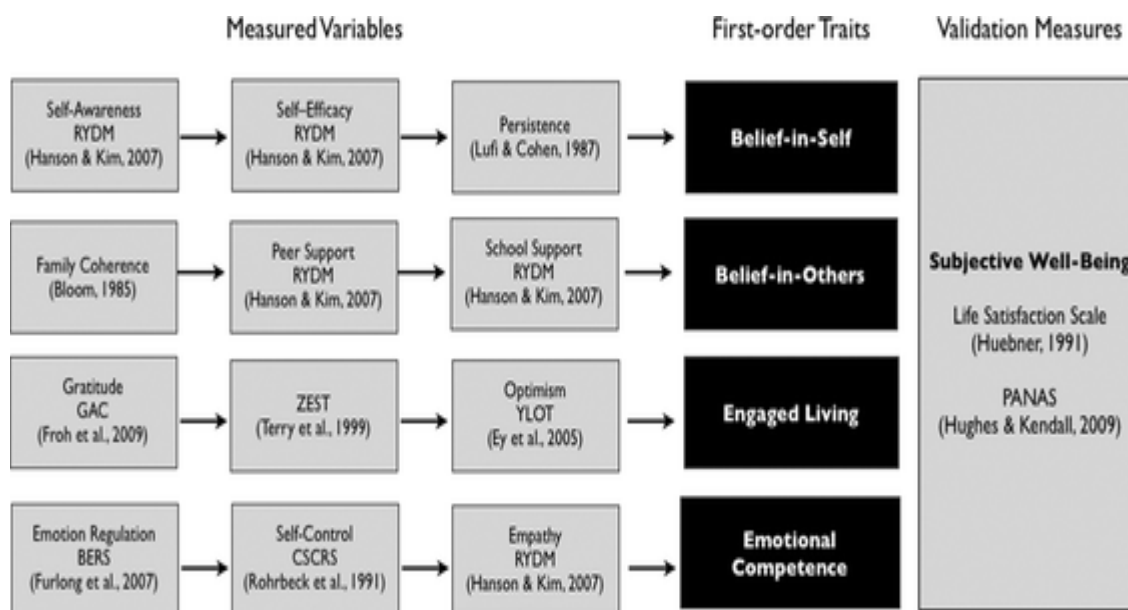
Figure 2.3: Conceptual Frame and Correlates of Covitality. Furlong, You, Renshaw, Smith, & O'Malley, 2013.

Covitality psychometrics present 12 psychological single traits (gratitude, zest, optimism,

emotion regulation, empathy, self-control, family support, school support, peer support, self-

efficacy, persistence, and self-awareness) related to four core self-schema domains (engaged

living, emotional competence, belief in others, and belief in self) (Furlong, You, Renshaw,

Smith, & O'Malley, 2013). The instrument used to measure covitality is the Social-Emotional

Health Survey, and its psychometric properties have significant correlations "related to and

predictive of important quality-of-life and school-based outcomes" (Renshaw et al, 2014, p. 27).

This study relates the SEHS-HE measures to the Review of Personal Life Experiences (ROPE) measurement with Locus of Control (LOC), an instrument that was developed as part of experiential learning programs. This research not only reveals overall covitality measures, implying an association with the subjective well-being indicators previously correlated with the SEHS-HE instrument, but with academic performance (GPA), and life effectiveness self-schemas represented by the ROPELOC as an assessment of workforce skills in the graduates.

Hope, gratitude, and grit studies help to form an understanding of covital characteristics, as well. Multiple sources (Curry, Snyder, Cook, Ruby, & Rehm, 1997; Rand, 2009) support the assertion that "Hope has been associated with a number of positive outcomes among college students, including higher grades and increased rates of graduation" (Eklund, Dowdy, Jones, & Furlong, 2011, p. 81). Additionally, McCullough, Emmons, & Tsang (2002) and Emmons & McCullough (2003)'s Gratitude research suggests this non-cognitive skill is associated with improved sense of well-being and positive feelings; and Miley & Spinella's (2006) exploration of gratitude's correlation to motivational drive, empathy and "strategic planning" in college students is also relevant research.

Grit, using the Duckworth, Peterson, Matthews and Kelly (2007) definition, describes the componential pieces related to perseverance and stability of interests and also serves to support the present definition of covital and non-cognitive constructs. Higher grit measures appear to positively correlate with higher educational attainment, higher GPA, and is positively associated to positive psychological functioning (Duckworth, Peterson, Matthews & Kelly, 2007). College students are the primary research demographic in these reliable studies with valid measures (Eklund, Dowdy, Jones, & Furlong, 2011). The findings from these studies support that "fostering life satisfaction, hope, and gratitude among college students may serve as a buffer or

coping mechanism to ward off later development of clinical symptoms as well as contribute to enhanced well-being" (Eklund, Dowdy, Jones, & Furlong, 2011, p. 88). This study supports a dual-factor model which "suggests that the goal is not only to move away from mental illness, but also toward a goal of flourishing, which fits well with the aims of college life and education" (Eklund, Dowdy, Jones, & Furlong, 2011, p. 89).

Ideas such as adaptation and resiliency development, which are also socio-emotional, non-cognitive strengths, are identified and emphasized by using Positive psychology's dual-factor model, associating these ideas with optimal functioning (Keyes, 2005) and with 21st century skills (P21, 2002). Features such as coping, adaptation and providing reflective, evaluative and non-cognitive orientations to students' psychoeducation (also referred to as identity anchoring) appear to create improvements in *optimal human functioning* (Eklund, Dowdy, Jones, & Furlong, 2011).

Cognitive appraisal, self-representations or self-schemas, are also related to executive functions, with social cognition (Craig, 2009; Dweck, 2008; LeGrande & Ruby, 2009). Blair and Razza (2007) focus research on executive function (EF) which is a componential construct involving multiple attention and brain operations (including cognitive control, planning, memory, and attention). Executive function has been correlated with emotional expression and modulation. Those with low EF have increased difficulty with impulsivity and reactivity (Kane, Brown, McVay, Silvia, Myin-Germeys, & Kwapil, 2007). These processes of self-control, part of the covitality construct, have been longitudinally correlated with significant long-term outcomes (Moffitt, Arseneault, Belsky, Dickson, Hancox, Harrington, Houts, Poulton, Roberts, Ross, Sears, Thomson, & Caspi, 2011). These EF skills and dispositions are under the umbrella of "self-regulatory skills" (p. 1) and are specific to attention, emotion, self-appraisal, empathy

and compassion, all non-cognitive skills and present within the measurement of both instruments used in this study, along with skills emphasized in 21st century success (Heckman, 2007; Heckman, Stixrud, & Ursua, 2006; Knudsen, Heckman, Cameron, & Shonkoff, 2006).

Zins, Weissberg, Wang, and Walberg (2004) highlight how strengths in the area of self-regulation, associated with academic performance, as outlined above, and non-cognitive performance, support academic success, and improve positive citizenry by improving socio-emotional skills. Urry et al. (2006) use neuroscience applied to the contemplative practices in mindfulness research, identifying brain plasticity related to development. They assert the importance of cultivating these emotion regulation skills for multiple long-term benefits (Urry, et al., 2006). Empathy training and compassion training have been studied using neuroscience to analyze *empathy-related brain circuitry* (Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008) revealing that neuroplasticity is possible and these prosocial, socio-emotional, and non-cognitive skills can cause improvements in functioning (Leiber, Klimecki & Singer, 2011). This reinforces the idea that educators can provide the scaffolding for these non-cognitive schemas.

These non-cognitive skills represent both social-emotional learning (SEL) and 21st century skill development when viewed through a Positive psychology lens. Durlak, Weissberg, Dymnicki, Taylor, & Schellinger (2011) completed a meta-analysis of hundreds of SEL studies, finding that these non-cognitive skills are largely correlated with 'meaningful' improvements on performance measures, such as improved achievement test scores. This has also been used in prevention programs in multiple areas (substance abuse, violence, anti-social behavior), as well as involved in promoting positive youth development (O'Connel, Boat, & Warner, 2009).

Non-cognitive Skills and 21st Century Skills

Cognitive skills can be considered as the "skills developed through schooling, usually in content areas such as mathematics and English language arts that are readily measured with standardized tests" (Kyllonen, 2012, p. 4). He further states that non-cognitive skills, then, are "all other skills developed through schooling that are not reflected in cognitive test scores.... Sometimes non-cognitive is confused with personality, but non-cognitive is intended to be a broader term, with personality perhaps being a part of non-cognitive skills" (p. 4). Twenty-first century skills, similar to non-cognitive skills, have a broad and imprecise definition. These skills are distinguished from former educational and workforce skills because of the changes in technology and culture, "leading to changing demands in the workplace" (Kyllonen, 2012, p. 4).

Autor, Levy, and Murnane (2003) and Levy and Murnane (2004) explore applications of 21st century skills as social, regulatory, and communicative. Social-emotional learning (SEL) is presented as playing a role in developing these non-cognitive competencies. The field of education is more recently incorporating learning regarding managing emotions, positive goal setting and achievement, appreciation of multiple perspectives, capacity for positive relationships, decision making, and interpersonal skills building due to the changing demands of the workforce. Durlak et al. (2011) expounds on these skills, and recognizes that these non-cognitive skills encompass a "broad spectrum of skills, perspectives, capabilities, and competencies" (Kyllonen, 2012, p. 4) evolving as necessary for educational and workforce success.

The Center for Academic and Workforce Readiness and Success (CAWRS) has partnered with the Educational Testing Service (ETS) in order to explore the measurement of personal characteristics required for educational success, which have heretofore been disregarded by the

typical educational assessment and content tests used in academia (Kyllonen, 2012). However, no instrument has been formally recognized or widely disseminated within educational research studies. The 1990s saw a growing exploration of core content measures, cognitive skills assessments and the emphasis on cognitive markers of educational attainment; however, no simultaneous effort to measure non-cognitive or applied skills is common-place (Kyllonen, 2012).

The cognitive focus is revealed in articles that highlight the gap in college-high school earnings differentials (Murnane, Willet, & Levy, 1995). This focus emphasizes the importance of higher education. Follow-up articles reveal content/curricular gaps, such as the *math gap* relevant to cognitive skills learned in higher education (Murnane, Willett, Duhaldebord, & Typer, 2000). These highlight the content-based disparities in curriculum. Implied, however, is the priority of curricular content over a variety of psychosocial skills (Hernstein & Murray, 1994; Jensen, 1998). Maintaining focus on cognitive/content-based performance measures has not resulted in closing the gaps related to curriculum and achievement. Yet, content outcomes are the measures that are evaluated. This researcher proposes that redefining success measures includes an incorporation of non-cognitive instrumentation within higher education.

Social science operationalizes non-cognitive skills, and Positive psychology begins to cluster these strengths into covital constructs to be studied together. This strengths-based emphasis on covital clusters must be highlighted as an important direction toward an evidence-based model in the field of education. Miller (2016) outlines the importance of non-cognitive skills by identifying the need for social and professional skills in the workforce. He reflects on the gap between a graduate's cognitive (content-based hard skills) and non-cognitive (applied) skills. He further defines Dweck's idea of *mindset*, describing: "the set of attitudes, behaviors

and motivations that enable knowledgeable graduates to work with others productively, flourish and live a purposeful life" (p. 1). He synthesizes Gallup poll survey results, revealing the lack of work readiness in the area of non-cognitive performance of recent college graduates. He reveals that "... studies indicate that the complex constellation of attitudes, behaviors and motivations (mindset) that transcend any set of college courses often has more significant impact on long term success in life than academic achievement does" (Miller, 2016, p. 1). Workforce skills are evaluated as behavior economics, specifically defined as social and professional, and are correlated with aspects of well-being and socio-emotional learning (Carneiro & Heckman, 2003; Heckman, 2007; Heckman, Stixrud, & Urzua; 2006). With the synthesis of workforce skills, these non-cognitive strengths deserve analysis in the realm of higher education.

Classic metrics in higher education include factors as admissions selectivity and yield, test scores, retention rates, grades, and graduation rates. These are and will remain of substantial importance to all higher education institutions. But behavioral economic measures--which recently have become more widely adopted in other industries--include such factors as engagement, hope, excitement about the future and emotional support (Miller, 2016, p. 6).

Dweck's (1998) growth mindset work epitomizes many of the non-cognitive skills under analysis. She describes mindset as a set of beliefs about identity, abilities, strengths and talents. She describes these beliefs and attitudes, mindsets, as either fixed or growth-types. Fixed mindsets represent an idea that higher order constructs, like intelligence or personality, are a fixed trait, unchanging through time. Growth mindsets, however, embrace that strengths, talents, and abilities are constructed and co-constructed through effort, learning, and determination. Mindsets are often, says Dweck, impacted not by what is taught but by how it is taught. She describes the cueing and conditioning that cultivates a growth mindset, citing non-cognitive self-

schemas related to attitudes and motivations. Though non-cognitive skills have been examined as single traits, exploring how they cluster together within a student's experience is an incredibly useful evaluation in considering growth mindsets and learning power possibilities of students developing 21st century skills within their educational environments.

Heckman (2007) used Dweck's mindset research and Duckworth's research on *grit* to support his emphasis on non-cognitive skills. He described 'grit,' as part of behavioral economics, and indicated that is a "better predictor of success in life than is academic ability or achievement" (Miller, 2016, p. 8). Ultimately, convergent research is revealing that workforce skills, "the behaviors above and beyond technical skills" (p. 5), are holistic and transdisciplinary. These skills not only engaging the depth of expertise, but breadth of knowledge within an individual.

Claxton (2002), an advocate of deeper learning initiatives, supports co-constructing non-cognitive skills in the form of *learning power*, a term coined in *Building Learning Power* (2002). He provides a practical application of non-cognitive skills in education. He argues that the following four 'R's' should simultaneously exist with traditional content-based Reading, Writing, and Arithmetic:

1) Resilience
2) Resourcefulness
3) Reflection
4) Reciprocity

Claxton (2002) has also authored research attempting to introduce this socio-emotional perspective on the future of education in the 21st century.

Teaching non-cognitive skills as life skills, becomes a repackaged idea throughout academia, from educational and philosophical forerunners to progressive educators, to more

modern researchers including Aristotle, Claxton, Dewey, Dweck, Erikson, Heckman, Seligman, Socrates, and Vygotsky, examining the clustering of these strengths and contemporary transformational change movements within education. Without psychometrics and quantitative research to provide evidence-based interventions, higher education may not attend to the very real need for transformation. This emphasis on strengths and values related to applied, non-cognitive skills, has not gained momentum in educational assessment (Kyllonen, 2012). Marrying the ideas as related to 21st century workplace success, in the context of the community college's mission, provides a language that may support changing practice.

Strengths-based Cultural Capital: From Counseling to Classroom to Boardroom

The term *cultural capital* refers to "forms of knowledge, skill, education, attitudes and expectations, or any other advantages a person might have, which make environments such as the educational system a familiar place where they can succeed easily" (Stuart, Lido, & Morgan, 2011, p. 490). Importantly, the term *habitus*, defined as "people's patterns in thought, beliefs, behaviour [sic] or taste" (p. 490) is also cited. The present study focuses on habitus as self and other schemas, a reflection of one's non-cognitive skills, and measured by the instruments used in this study. Selected schemas, or habitus, can play a role in student success within their experience of higher education. Supportive learning experiences could support the formation of improved habitus, resulting in higher expectations and better success outcomes, both academically and personally (Seligman et al., 2009; Seligman, 2011; Wong, 2017). These domains should be considered simultaneously: one's well-being impacts their learning, and one's learning impacts their well-being.

The Partnership for 21st Century Skills (P21, 2002) proposes educational reform to the three 'R's' of core subjects (Reading, Writing and Arithmetic), offering an additional 4 C's:

(critical thinking, communication, collaboration, creativity). The Assessing and Teaching of 21st Century Skills (ATC21S) organization supports the following 21st century skills:

- Ways of thinking (creativity, innovation, critical thinking, problem-solving, decision making, and metacognition)

- Ways of working (communication, collaboration and teamwork)

- Tools for working (information, technology, and communication literacy) and

- Living in the world skills (life and career, personal and social responsibility) (Kyllonen, 2012, p. 6).

These terms can be collectively summarized as non-cognitive, covital, 21st century strengths through a Positive psychology lens.

Understanding intrapsychic components of successful academic performance can assist researchers and educators with better understanding how to meet the needs of students and other stakeholders in the realm of higher education. Appreciating the relationships between non-cognitive skills and success outcomes allows for an education delivery system that may increase the possibilities for academic success, more educational satisfaction, and an increase in feelings of efficacy, potentially resulting in improvements in multiple domains of living, related to the overall feelings of subjective well-being and positive mental health (Jones, You, & Furlong, 2013; Stuart, Lido, & Morgan, 2011; Trujillo & Tanner, 2014; You et al., 2011). Moreover, as community colleges distinguish themselves as workforce readiness institutions, this strengths-based assessment practice of examining non-cognitive skills should be part of successful outcomes assessment.

A survey of more than 400 US employers across fields resulted in a distinction between *applied* skills and *content* skills (Casner-Lotto & Benner, 2006). The survey revealed findings that over 90% of employers responding rated the following skills as "very important": Oral and written communication, Teamwork and collaboration, Professionalism and work ethic, and Critical thinking and problem-solving. These *applied* skills outranked the surveyed *content* skills, thereby supporting the idea that non-cognitive strengths are required in the workforce.

Casner-Lotto & Benner (2006) assigned a percentage of employer responses revealing the following skills as very important in 2-year college graduates: Ethics/Social responsibility (86%), Leadership (82%), Creativity/innovation (81%), Lifelong learning/self-direction (78%), and Diversity (72%). Again, these high ratings emphasize employer preferences for non-cognitive, social-emotional skills. If these skills are required in both educational and workforce success, how are they assessed in academia?

Multiple surveys addressing skills preferred in the workplace reveal the growing emphasis and importance of non-cognitive and socio-emotional skills. Manyika et al. (2011) completed a survey of the McKinsey Global Institute's review of barriers to a qualified workforce, and among the top barriers were: Unsuitable work habits, Insufficient problem-solving, and Poor communication skills. All of these facets lead into the non-cognitive skills required in the 21st century. While deep learning initiatives have been intermittent in the last decade of educational research, the National Research Council (2012) has partnered with the National Academy of Sciences to provide an organizational framework for these skills.

This research collaboration has distilled components of 21st century skills into three groups: Cognitive skills, Interpersonal skills, and Intrapersonal skills. Overlap, though evident, provides an inroad to assessment in the community college setting. As a psychotherapist, this

researcher identifies two of these three groupings as related to non-cognitive components (inter/intrapersonal skills).

Race to the Top legislation (RTT) catalyzed additional research into core standards and 21st century skills in education (Kyllonen, 2012). The SMARTER Balanced Assessment Consortium (SBAC) and the Partnership for Assessment of Readiness for College and Careers (PARCC) found deficits in the non-cognitive grouping: interpersonal and intrapersonal domains (Kyllonen, 2012). Though mainstream educational assessments focus primarily on cognitive content skills, 21st century skills must be measured in educational institutions of higher learning. This research aims to bring in non-cognitive assessments from Positive psychology and experiential learning to serve as these interpersonal and intrapersonal measurements within the community college context.

Claxton states:

There are two good reasons for reconfiguring 21st century education: economic and personal. The well-rehearsed economic argument says that knowledge is changing so fast that we cannot give young people what they will need to know, because we do not know what it will be. Instead we should be helping them to develop supple and nimble minds, so that they will be able to learn whatever they need to. If we can achieve that, we will have a world-class workforce comprising people who are innovative and resourceful. The personal argument reaches the same conclusion. Many young people are floundering in the face of the complexities and uncertainties of contemporary life. (Claxton, 2002, p. 1)

Importantly, the non-cognitive skills being analyzed are correlated with, and predictive of, increases in well-being (in addition to indicators of employment and academic success) making

the covital higher order groupings of non-cognitive skills essential to evaluation in academic settings.

Though research exploring non-cognitive skills has grown, and some meta-analyses reveal the importance of personality, attitudes, and motivation on academic achievement have been explored, this focus is not a widespread practice. Meta-analyses and correlations between personality factors and higher education outcomes (Crede & Kuncel, 2008; Noftle & Robins, 2007; Poropar, 2009; Robbins et al., 2004) and workforce outcomes are beginning to be evaluated (Dudley, Orvis, Lebiecki, & Cortina, 2006). This study adds to this examination.

The National Educational Longitudinal Study (NELS: 88) examines the non-cognitive factors related to workforce earnings some 20 years after the initial content testing. This assessment reveals that non-cognitive factors such as "responsibility, independence, outgoingness, persistence, emotional stability, and initiative" were "at least as important in predicting employment and earnings, 20 years later, as were cognitive skills" (Kyllonen, 2012, p. 3). With so much focus on cognitive skills in education, this research begs a reconsideration for defining success outcomes inclusive of non-cognitive strengths.

Bowles, Gintis, & Osborne (2001) proffer that cognitive skills are not the only variables related to economic success. Durlak et al. (2011) review social and emotional learning (SEL) programs in schools and find that students involved in school-based SEL interventions demonstrate significantly improved non-cognitive skills, attitudes, achievement gains and behaviors as compared to students in control groups. By 2011, Durlak et al. (2011) identified evidence based practices that justified incorporating socio-emotional learning interventions within K-12 schools.

As these non-cognitive skills are examined in the context of educational and workforce outcomes, the idea that socio-emotional learning and psycho-social components are important to education becomes a more pressing landscape to explore. Furthermore, educators must incorporate these skills as necessary parts of the 21st century curriculum required in the world today. This study's non-cognitive framework and covital clustering is used to research whether strengths identification of positive emotional-behavioral traits are related to more successful academic outcomes within community college education in rural Maine.

Mental Health Needs in Education

Often, leaders in schools, institutions and other organizations create policy or procedures in order to address barriers, limitations or problems. Research cited here illustrates this deficit-identification and deficit model emphasis across fields (Harry & Klingner, 2007; Henry, Svence, & Petrulite, 2016; Kauffman, Hallahan, Pullen & Badar, 2018; Klinger & Edwards, 2006; Meltzer, 2018). Students, employees, and civilians, alike, come to the attention of governance when something is not right: if remediation, plans of correction, or legal intervention is required. However, in surveying this educational and social science literature, non-cognitive skills are implicated in multiple strengths-based outcomes, from improvements in well-being, motivation, and higher academic performance, to recognition in employment and leadership skill development programs (Martin, 2018). This perspective allows for positive inquiry within educational institutions, independent of the problems or challenges more normatively measured.

Cross-culturally, a movement to focus on the growing mental health needs of countries within the education realms there has occurred (World Federation of Mental Health, 2013). The European Pact for Mental Health and Well-being (2008) outlined the need for its member states and stakeholders to attend to 1) Mental health in youth and education; 2) Prevention of

depression and suicide; 3) Mental health of older people; 4) Combat[ing] stigma and social

exclusion; and 5) Mental health at the workplace. The increased focus on mental health issues,

specifically in response to recent school shootings, requires an intervention. A psycho-social

intervention appears most important. An emphasis on strengths identification and psychometric

measurement may embody the Pact's intentions. Mental health support in higher education is an

essential part of ensuring academic success, and assessment is a pivotal part of assessing these

covital psychometrics.

Socio-Emotional and Cognitive Connections in Learning and Well-being

Connectedness research has roots within resiliency research, and comes out of Resnick,

Bearman, Blum and Udry's (1997) examination of school connectedness and high risk behavior.

Positive psychology has emphasized the dual factor model to support that risk correlates may

also have health promotive mediators. For instance, economic stressors may not present risks if a

youth experiences self-efficacy or self-esteem building experiences. Resnick et al. (1997) also

found that perceptions of connectedness is correlated with a reduction in high-risk behaviors.

Researchers identify that school belonging is "an important predictor of negative

affective problems in adolescents, including depression and anxiety symptoms" (Shochet, Smith,

Furlong, & Homel, 2011, p. 586). Brookmeyer, Fanti, and Henrich (2006), and Rice et al. (2008)

provide support for a significant negative correlation between less connectedness and higher

delinquent behaviors, as well. There is evidence that emotional-behavioral disorders (EBD) and

their diagnosis and assessment process, using the pathological paradigm, are correlated with

deleterious school related outcomes, including disciplinary actions, from referrals to suspensions,

drop-outs and legal interventions (Center for Community College Students, 2013; Dowdy et al.,

2016; Kim, Furlong, Dowdy, & Felix, 2014; Shochet, Smith, Furlong, & Homel, 2011; Stuart, Lido, & Morgan, 2011).

Ideas such as connectedness, sense of belonging, level of identity and engagement, and other non-cognitive foci, are beginning to come to the fore given the prevalence of socio-emotional difficulties permeating the front pages of the world news. In these news stories, lack of belonging, connectedness, feelings of isolation, bullying, and socio-emotional barriers are identified as associated variables. According to a 2016 ABC News report, there have been 270 shootings at schools, in total, since Columbine. More startling is that since 2015, an average of one shooting per week on a school or college campus, now occurs (Pearle, 2016). What is remarkable is that these numbers do not include the plots that are thwarted or failed.

A larger view of socio-cultural unrest described as linked to mental health needs comes from a 2014 *New York Times* review of the incidence of mass shootings outside of schools. They reported an average of 16.4 shootings every year, in the years from 2007-2013 (Schmidt, 2014). What causes these incidents? And, how can institutions organize thoughtful interventions?

The American Foundation for Suicide Prevention (AFSP) estimates 44,193 Americans die by suicide each year, and that for every completed suicide, 25 suicides are attempted. In conjunction with the Center for Disease Control (CDC), the AFSP reports that the number of hospital visits for self-inflicted, self-harm, injuries in the year 2015 was 494,169 (American Foundation for Suicide Prevention, 2017). From these numbers, it is clear that there are mental health crises in epidemic proportions. The socio-emotional skills examined, related to non-cognitive functioning, may support improvements in school and professional domains. Could they support personal improvements?

Given these statistics, a focus on mental health and wellness is a necessary focus in American educational systems. Cowan (2014) highlights the National Association of School Psychologists (NASP)'s Strive, Grow, and Thrive initiative, emphasizing the need to "foster the thriving social, behavioral, and emotional well-being of all students" (Moore et al., 2015, p. 253). Universal mental health screenings, within the school settings, are increasing, likely in response to these mental health crises. However, problem-focused screening continues to be the predominant method of policy and practice within educational settings, despite the evidence that it does not produce significant *actionable* results (Moore et al, 2015, p. 254).

Embodying Moore et al.'s reflection that "all youth have strengths that can be fostered in an effort to promote positive outcomes" (2015, p. 254), this research targeted the strengths that lead to positive outcomes. Treating and remediating problems will continue to be a necessary part of education. Educators must understand their part of a learner's academic success as constructed upon the experiences and schemas, both cognitive and non-cognitive. Applied and content skills are both historically and presently important. It is this researcher's position that the educational environment should adjust its approach to cultivate covital and non-cognitive constructs that support well-being and non-cognitive competence.

Many college mission statements reveal implied emphasis on non-cognitive skills. For example, the mission statement of the Community College explored in this study is to prepare "students to achieve their educational, professional, and personal goals in a supportive environment through shared values of responsibility, integrity, and respect" (Community College Site, 2016, p. 15). The values held at this institution are inherently connected with covital constructs and can provide a guiding vision within the pillars of Positive psychology: positive institutions, positive experiences, and positive traits.

As demonstrated in this literature review, research across numerous fields demonstrates the relevance of ideas related to Positive psychology, Constructivist theory, and the overlap between non-cognitive skills and 21st century workplace requirements. Blending these fields is the missing piece. The concept of ethos in education returns the focus to the rationale for this quantitative study. Framing these ideas in combination mirrors assessing strengths in combination, and embodies the transdisciplinary requirement revealed in 21st century workforce success. By combining these ideas, this researcher presents a cogent argument for transforming education through strengths and values identification.

Ethos highlights the "quality and character of school life, including norms, values and expectations" (Aldridge, Ala'i, Fraser, & Fozdar, 2015, p. 31). Ethos "in which culture plays an important role in the development of psychological functions" (p. 32) influences institutions, which influences experiences, which influences traits. This brings this quantitative study back to the Positive psychology conceptual frame.

When looking at outcomes, how have non-cognitive skills been taught, assessed or measured? If education is considered mental training, the most important mental training related to non-cognitive skill development is often omitted from the Western academia. Though few formal contemplative pedagogical practices are used in the educational settings, this researcher asks if community college graduates are demonstrating non-cognitive skills, and whether these skills will correspond to one another and to higher grade point averages. Quantitative evaluation of self-assessment scores related to these non-cognitive self-and other-schemas revealed the students' perceived presence of these non-cognitive skills, and demonstrated the association between these skills and student cumulative GPA.

Conceptual Framework

This research expanded on the usefulness of non-cognitive measures in the community college setting, relating these to socio-emotional non-cognitive skills associated with 21st century workplace success. Specifically, the researcher used the Social Emotional Health Survey-Higher Education (SEHS-HE) and the Review of Personal Effectiveness with Locus of Control (ROPELOC) instruments to identify non-cognitive skills, engaging in statistical inter-instrument comparison, and correlating these measures with academic grade point averages within the community college setting. This approach gives consideration to non-cognitive strengths, required for the formation of 21st century skills, independent of deficits or cognitive assessment. Using this perspective to analyze covitality and personal effectiveness demonstrates an understanding of the learning experiences' impact on schemas. This is a fundamental step to improving higher education. Emphasizing features of emotional competence, engaged living, belief-in-self, and belief-in others for promotive and preventative interventions impacting student achievement outcomes may lead to better prepared 21st century global citizens. A visual summary of the conceptual framework used to inform this study is portrayed in the graphic below.
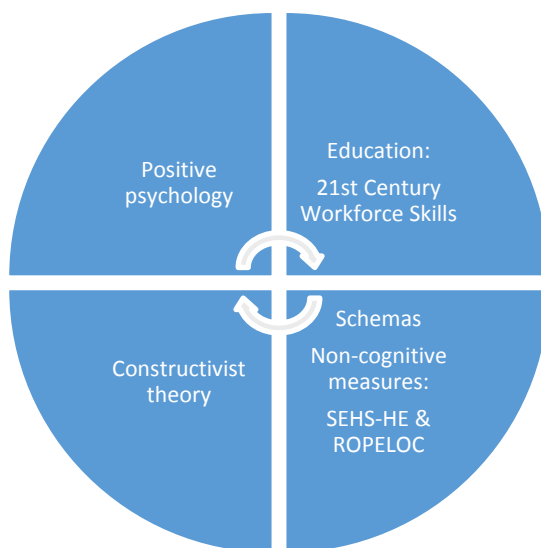
Figure 2.4: Counseling to Classroom: Reflexive and Iterative Process in Learning. Rebecca A. Martin, 2018.

The rationale for the research is to turn attention to the education system's identification of strengths and values necessary in 21st century skills. This shift can be applied to promote psychological well-being, not only for individuals but within institutions, both academic and professional. Upon graduating from community college education, students should possess these skills; however, no evidence based assessment examines whether students attain these skills within higher education programs.

Harter (2007) suggests that developmental experiences and brain organization allows for "meta-cognitive strategies that enable introspection and reflection on past and imagined future selves" (p. 267). Dweck (2008) ties this understanding into the educational system, with examples of the importance of students' own beliefs in their intelligence. She implies that interventions that build the *intelligence* schema as able to grow, rather than remaining fixed, alleviates some of the academic anxieties and poor performance related to the idea of a static

intellectual capacity. Stretching this into identification of non-cognitive schemas which are able to grow, dovetails with the emphasis on 21st century skills. Despite this, little practical application of this research can be enacted until assessment tools reveal the non-cognitive development of students.

Self-assessment is an important tool when surveying these non-cognitive self-representations; this is a primary psychotherapeutic intervention in psychology. Self-assessment allows for basic schema analysis of a student's habitus, identifying the psychological capital that may be present upon graduation and determining its relationship to academic performance, via correlative analysis with grade point average (Kafka, 2016). Using a quantitative instrument for self-assessment reflects these psychological assets as demonstrable schemas, and provides a foundation from which to start to discover how growth and improvements can take shape.

The college can play the part of a positive institution by prioritizing these assessments, expanding on non-cognitive learning opportunities, and emphasizing these variables as a correlates of inter-personal and intra-personal success. Providing positive experiences and fostering these positive traits, as measured by the SEHS-HE and ROPELOC instruments, returns this educational institution to the values of ancient education's character building, which fosters its own mission of workforce readiness. The college can offer a strengths-based practice supporting transformational change in preparation for workforce success required in the 21st century.

Instruments

The Review of Personal Effectiveness with Locus of Control (ROPELOC)

The Review of Personal Effectiveness (ROPE) Locus of Control (LOC) instrument, often seen as ROPELOC, was developed over a two decade period (Neill, Marsh & Richards, 1997). This instrument asks, specifically, what makes a person effective in their life – at school, home, or work. It was designed to tap into key psycho-social components that indicate a person's effectiveness across these domains within experiential learning programs. By 2000, the ROPE System had become a widely used instrument to examine the types of personal and non-cognitive changes achieved through these learning programs. The ROPELOC instrument was tested and studied as an exploration of personal change learning experiences, including testing on over 10,000 training program participants in a wide variety of settings. A barrier in non-cognitive skill assessment creation, thus far, has been the one size fits all measures derived from psychological and clinical questionnaires. Their adequacy within the educational or training setting is limited. In response to the lack of specially-designed measurements for education, the ROPELOC system was developed (Neill, Marsh, and Richards, 1997).

The basic psychometrics of the ROPELOC instrument include 14 scales: Personal Abilities and Beliefs (self-confidence, self-efficacy, stress management, open thinking); Social abilities (social effectiveness, cooperative teamwork, leadership ability); Organizational Skills (time management, quality seeking, coping with change); an 'Energy' scale called Active Involvement; along with measures of Overall Effectiveness in all aspects of life. Additionally, the instrument has a Control Scale which helps to determine the catalyst for the changes reported in the other scales. Two Locus of Control scales are included, as well. Locus of Control scales measure a person's attribution of responsibility for actions/successes, and are delineated as either internal or external (Neill, Marsh & Richards, 1997).

Locus of Control (LoC) research addresses the personal attribution process. Attribution processes provides insight into how individuals construct their schemas and make sense of their experiences. Educational researchers Basak & Ghosh (2011) resurrected Rotter's (1954) LoC social learning theory concept of personality, and support the necessity of this construct being applied to education:

> Individuals with a high internal locus of control believe that events result primarily from their own behavior and actions. Those with a high external locus of control believe that powerful others, fate, or chance primarily determine events. Research has shown that a person's internal-external locus of control impacts his/her performance and job satisfaction (Brownell, 1981; Dailey, 1980; Kasperson, 1982). Individuals with internal locus of control seem to better adapt to varying situations in a more functional way than do people who have an external locus of control (Judge, Locke, Durham, and Klugar, 1998). Locke (1983) and Spector (1982) found that individuals with an internal locus of control orientation appear more motivated, perform better on the job, [and] express higher job satisfaction levels than individuals with an external locus of control. (Basak & Ghosh, 2011, p. 1200)

Review of the Socio-Emotional Health Survey--Higher Education

The Social Emotional Health Survey-Higher Education (SEHS-HE) is a measure of covitality. This questionnaire, and the covitality research that supports youth development, comes from a research collaboration grant through the University of California and the International Center for School Based Youth Development. The scale development emphasizes four latent traits: Belief-in Self, Belief-in Others, Emotional Competence, and Engaged Living. Each of these domains is accompanied by specific subscales addressing self and other schemas.

Belief-in Self includes student assessment of self-efficacy, persistence, and self-awareness.

Belief-in Others includes measures of perceived support through family, peers, and the

institution. Emotional Competence includes subscales related to cognitive control, empathy and

self-regulation skills. Finally, the Engaged Living construct includes measures of gratitude, zest

and optimism (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014)

(See Figure 2.5).
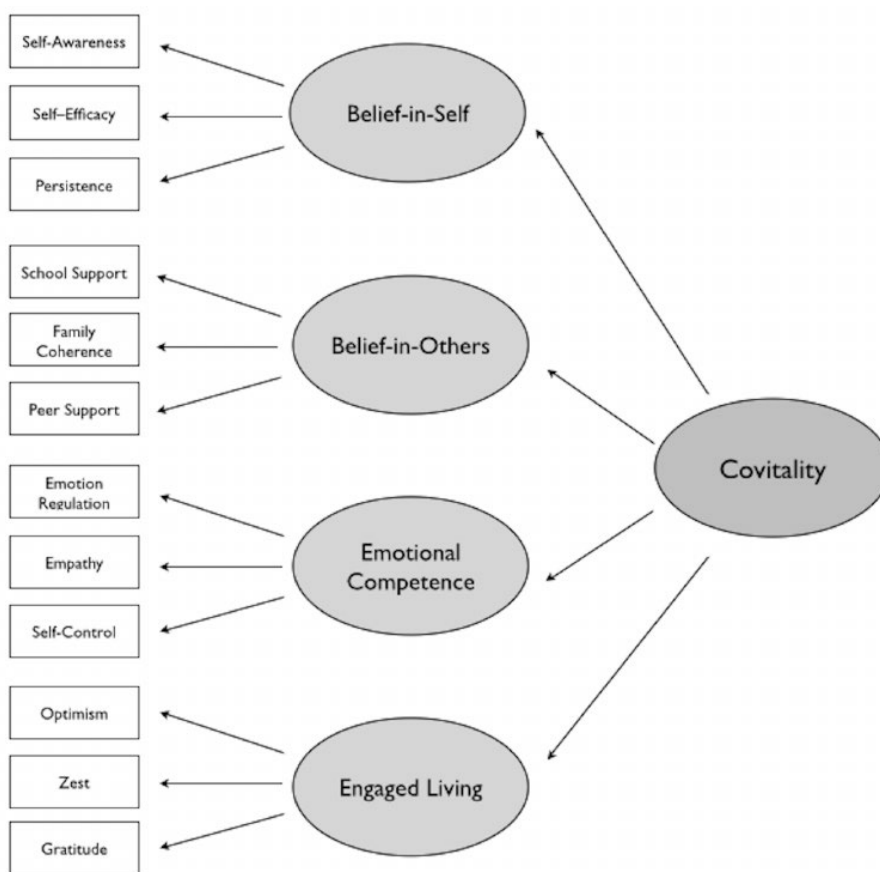
Figure 2.5: Social Emotional Health Survey Conceptual and Measurement Model. Furlong,

2015.

Confirmatory factor analyses and five phases of assessment and structural validation assess stable and strong validity and reliability. The SEHS-HE's predictive validity for student's covital psychological constructs aims to measure student well-being to foster improvements, both academically and personally (Ito, Smith, You, Shimoda, & Furlong, 2015).

Covitality's componential scoring reveals these areas of assessment, comprised of specific sub-factors. Two of these higher-order constructs focus on connection, explicitly: belief in self and belief in others. Using connection research in education, reviewed in the Relevant Research section, serves as an example of the way this type of psychometric can be utilized to quantify what is often explored qualitatively, supporting the theory of covitality and the impact on positive outcomes in education possible with quantitative methodology.

This researcher argues that utilizing these socio-emotional, non-cognitive variables (such as connectedness) serves community colleges by promoting interventions and prevention possibilities while identifying 21st century workforce skills in higher education. With this type of covital information available, the educational system can target student skills in navigating the socio-emotional needs within the college experience, and by doing so, can improve success outcomes.

Covitality: Belief in Self

The covitality latent construct of Belief in Self (BiS) includes subscales related to self-efficacy, persistence, and self-awareness. Aydeniz and Hodge (2011) present work on identity, importantly finding that identity is one of the central theoretical concepts in numerous disciplines. Quoting Gee (2002) they define identity as the ''kind of person one is recognized as being, at a given time and place'' (Gee 2002, p. 99, as cited in Aydeniz & Hodge, 2011, p. 167).

This is an important component for understanding the necessity of this systems approach. Self-assessment allows the individual to recognize expertise on their own constructed non-cognitive skills. It also highlights both inter-and intra-personal process mechanisms, thereby identifying what kind of person one believes they are, at this given time and place. Sfard and Prusak (2005) associate this type of schema indentification with the contexts within which the individual views their roles and constructs their identity. The context of the Community College education, then, places educators as leaders in the experience of teaching and learning. As leaders, each must understand that schemas can be constructed, deconstructed, and co-constructed. This understanding serves to support strengths-based habitus/schema creation as a co-created process that occurs within the teaching/learning experience. Theoretical emphasis on the development of these non-cognitive processes informs this researcher's use of quantitative self-assessment of these and other covital domains.

Self-efficacy has been a covital construct on which there is significant historical research, (Komarraju and Nadler, 2013; Lawson et al, 2007; McConnell et al 2010; Sawtelle et al., 2012; Seymour and Hewitt, 1997; Usher and Pajares, 2008; Zimmerman, 2000). Studies have supported self-efficacy's relationship to academic achievement, perseverance and self-regulated learning (Trujillo & Tanner, 2014, p. 8). Self-efficacy is operationally defined by using Bandura's 1997 efforts: "the exercise of human agency through people's beliefs in their capabilities to produce desired effects by their actions" (p. vii, as cited in Trujillo, & Tanner, 2014, p. 7). Of underlying significance, Bandura (1997) states "it is easier to sustain a sense of efficacy, especially when struggling with difficulties, if significant others express faith in one's capabilities than if they convey doubts" (p. 101, as cited in Trjillo & Tanner, 2014, p. 8). This

reinforces a strengths-based approach required for developing 21st century skills within the community college context.

Covitality: Belief in Others

While the role of close bonds, in research literature, has been studied in relational dynamics, families, and organizations, they have not been substantially studied in higher education to better formulate high impact practices that lead to more successful student outcomes. The covitality latent construct of Belief in Others (BiO) includes subscales related to family support, school support, and peer support (Furlong et al., 2014); Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014). The numerous psycho-social factors influencing the life decisions and choices of a community college student impacts formation of interpretive schemas used to construct and make sense of their experiences. A basic tenet in this conceptual orientation is that individuals see themselves as participants within an unfolding story, constructing schemas and expectations based on experiences, and interpreting and organizing their own actions in accordance with these schemas.

Group/self Identity, morale/subjective well-being assessment, motivations, and connection appear to be amorphous, interrelated, and pivotal indicators of well-being (Peterson, Park & Sweeny, 2008). This study used a quantitative approach to evaluating these variables, statistically analyzing metrics that reflect the non-cognitive heuristics that identify a student's constructed understanding of these schemas.

Students come to college with ideas about themselves, their classes, their future and their own expectations of self and others, and are required to make sense of what occurs. Understanding that students may build mastery with successful experiences requires educators to recognize the non-cognitive and affective states associated with success as pivotally important.

According to research (Dowdy et al., 2016; Jones, You, & Furlong, 2013; Trujillo & Tanner, 2014) support from others is a fundamental factor determining success in systems.

Covitality: Emotional Competence

The covitality latent construct of emotional competence includes subscales related to cognitive control, empathy and self-regulation skills (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014). The Mind and Life Education Research Network (MLERN) sponsors an integrated and multi-disciplinary approach to education, specifically researching these areas of self-awareness and socio-emotional habits (Zajonc, 2016). Drawing from neuroscience, cognitive theory, and developmental psychology, Positive psychology researchers examine education practices to "highlight a set of mental skills and socioemotional dispositions that are central to the aims of education in the 21st century" (Davidson et al., 2012, p. 146).

Rood, Roelofs, Bogels, Nolen-Hoeksema, and Schouten (2009) have researched explanatory styles, indicating that "pessimistic explanatory styles and rumination that construe self to be a cause of negative life events are core features of anxiety, depression and academic problems" (p. 612). This suggests the usefulness of the LoC measure associated with the ROPELOC instrument.

Clinical practices have targeted self-representations and meaning-making processes, leading to schemas, to support reappraisals and reframing, in therapy. Applying these types of targeted interventions in the area of self-awareness, academically, could be a covitality creating process. Roeser and Perck (2009) suggest a Basic Levels of Self (BLoS) model exploring the "implications of contemplative education for the cultivation of conscious and willful forms of learning and living" (p. 119). This approach assesses the correlations between self/identity,

motivation, and self-regulated learning, and calls for a shift toward contemplative education as a way of cultivating non-cognitive skills.

Covitality: Engaged Living

The covitality latent construct of Engaged Living (EL) includes subscales related to gratitude, zest, and optimism (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014). Single trait research on optimism (Scheier & Carver, 1985), hope (Snyder et al., 1991), and gratitude (McCullough et al., 2002) has been used by numerous researchers (Magaletta & Oliver, 1999; Rand, 2009; Seligman, 2005; 2011) to examine how these psychological factors are related to cognitive appraisals and the construction of schemas. Researchers, along with conducting studies on the concept of positive adaption and coping, resilience and psychological adjustment (Tugade & Fredrickson, 2004) have begun to examine how positive traits may be related to one another, and how these covital combinations breed success when found in combination.

Utilizing covital vocabulary and identifying these strengths and values will serve community colleges in the following ways: as an assessment for 21st century skills in community colleges; as promotive possibilities within the realm of higher education; and, as a contribution to a shared and operationally defined vocabulary which educators can epistemologically incorporate into pedagogical approaches within higher education. Embedded goals of this research include: 1) Discovering whether these non-cognitive skills are, in fact, present in the population examined; 2) Exploring whether there are inter-instrument correlations or programmatic/demographic patterns; and 3) Assessing for group-level interventions/needs to promote more empowering individual and group experiences (Peterson, 2006) in community college.

Conclusion

Educational leaders must understand the importance of non-cognitive skills and the community college role in workplace readiness training. As the 21st century demands specific non-cognitive skills for success, an analysis of whether these skills are present in graduating students is a worthwhile exploration. Justification for application of these models in the area of education include fields of Constructivist systems study and Socio-emotional learning, and how these are connected or related. Specifically, the research of Stuart, Lido, & Morgan (2011) uses an integrative model to identify and quantify *cultural capital* within education; and Furlong, Jones, You, Eklund, Dowdy, Trujillo and Tanner, also, incorporates an integrated perspective to quantify how covital strengths components can impact academic success.

Chapter Three provides the description of this study's quantitative approach, guided by the psychotherapeutic conceptual framework, and framed by the non-cognitive skills represented in 21st century workforce requirements. Methodology, including site and participant specifics is examined. Data collection procedures and a discussion of credibility, validity, and further questions follow. Chapter Four presents statistical analysis and findings from the data collected. This dissertation will conclude with Chapter Five, which summarizes the findings of this study, explores relevancy and concludes with a reflection and discussion of the research.

CHAPTER 3

METHODOLOGY

The overall design of this project takes a quantitative approach, using formal, objective, systematic data derived from two psychometric instruments: the SEHS-HE and the ROPELOC. This researcher correlated academic performance with these psychometric scores, assuming that higher non-cognitive scores on these instruments correlate to higher academic performance. This researcher also measured inter-instrument scoring patterns, using both analysis of variance and factorial analysis, engaging the SPSS statistical system and Qualtrics survey system to calculate coefficients and graph findings. This methodology fits a descriptive correlational design model, where the study seeks to describe the current state of the non-cognitive schemas found in this setting, using a correlational design which explores the relationships between and among the variables using statistical analysis.

This research integrates disparate disciplines in order to unite content (cognitive) and applied (non-cognitive) educational outcomes. This effort highlights non-cognitive strengths, required in the workforce, in an effort to assess whether workforce readiness institutions are preparing their students for the workforce by attending to essential non-cognitive skills. Using social science psychometrics in the realm of education innovates and expands on the gap in educational research so often focused on only cognitive or content measures as defining success.

The results of the surveys and subsequent analysis are intended to support a better understanding of the following research questions, using the figure, below (See Figure 8), to understand the non-cognitive constructs measured:

1) What are the self-assessment scores of community college students on the Social Emotional Health Survey-Higher Education and the Review of Personal Effectiveness with Locus of Control?

2) What is the relationship amongst these non-cognitive measures and graduating students' GPA?

3) What patterns emerge when inter-instrument comparisons are made?

Hypotheses

This researcher systematically collected information related to each measure analyzed, and determined the extent of the relationships among these variables in order to observe recognizable patterns in the data. Data resulted in both composite and componential scores related to each measure. The composite scores were evaluated in relationship to GPA. Meta-analyses of the factor scoring, also revealed correlates. This research suggests that qualitative analysis be applied within future studies.

The hypotheses examined are as follows (See Figure 3.1):

- $Hypothesis_1$: Covitality composite score will positively correlate to GPA

- Null $Hypothesis_0$: No relationship between Covitality and GPA

- $Hypthesis_2$: ROPELOC composite score will positively correlate to GPA

- Null $Hypthesis_0$: No relationship between ROPELOC composite score and GPA

- $Hypothesis_3$: Composite SEHS-HE score will positively correlate to Composite ROPELOC score

- Null $Hypthesis_0$: No relationship between composite scores
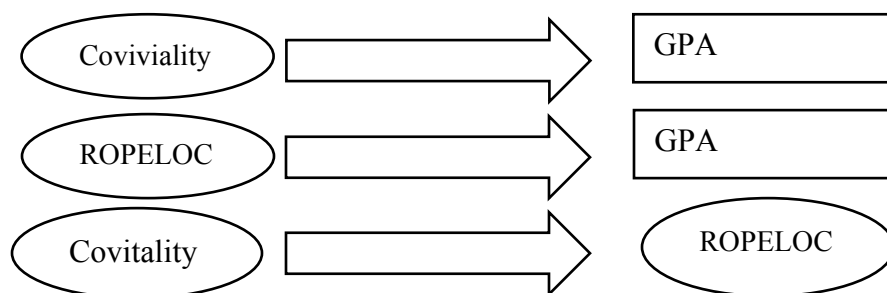
Figure 3.1: Study Hypotheses.

The researcher sought to answer questions regarding the relationship between GPA and non-cognitive skills, as measured by the SEHS-HE and the ROPELOC. The researcher also examined the relationships between the ROPELOC measures and the SEHS-HE measures. Some comparative analysis was generalized using additional demographic data, such as using program specific, age-specific, and/or gender specific demographics to trend the data, accordingly.

The goal of this study was to survey the graduating class to evaluate non-cognitive self-schemas present. These schemas are represented by the self-assessment responses to the non-cognitive measures on the instruments. Data analysis revealed whether there was a correlation between non-cognitive measures and grade point average (GPA). Additional analysis revealed whether some component non-cognitive measures emerged as more important combinations of strengths, than others.

As presented in the relevant research section, non-cognitive skills are pivotal to improving work force readiness in the 21st century. Though causal relationships cannot be drawn through this research, the rationale for this study comes from the workforce preparation mission of this community college. Correlational evidence can serve to exploit strengths and improve deficiencies in the non-cognitive schemas discovered.

In brief, this research assesses for covitality in connection to academic success; identifies correlates among instrument measures of students' self-assessment of non-cognitive skills; and frames these non-cognitive skills with 21st century workplace skills in community colleges, the educating institution most associated with workplace readiness. This is an important task when considering that 51% of the students in community colleges fail to persist (Center for Community College Student Engagement, 2013). This evidence-based approach may validate a need to attend to the non-cognitive constructs with more rigor, in higher education.

A Positive psychology framework embodies a developmental and systems approach. It not only allows for consideration of parts of the whole within the community college setting, but also adds dimension to each specific part that comprises the whole system. Viewing student schemas, in this manner, provides an integrated picture of processes related to the pillars of Positive psychology: positive institutions, positive experiences, and positive traits.

Student covitality and personal effectiveness measures, which are defined as representative of students' non-cognitive self-schemas, are related to specific psychologcial traits. When using these instruments, these traits are constructed in combinations to build specific intrapersonal and interpersonal domains. These domains represent mental models of beliefs and attitudes built from various experiences within systems, using this conceptual framework. Incorporating the cognitive success outcome, GPA, attends to the need to support cognitive development within higher education; while, assessing the non-cognitive skills builds on strengths awareness for the 21st century.

As described in the literature review, institutional experiences impact a student's self-schemas, which impact their traits; and, vice versa, traits will impact experiences, which will impact the institutional interactions. This influential directionality should be both explored and

exploited to transform community colleges to truly ambidextrous organizations. Understanding that the whole is more than the sum of its parts, and embodying a covital and non-cognitive perspective, allows for assessment of the community college educational experience through a psychotherapeutic lens.

This chapter reviews the study's research approach and questions, site and participant selection, data collection and analysis, confidentiality, and explores biases and limitations. The themes and patterns that emerged substantiate this whole systems, Positive psychology framework and non-cognitive skills assessment, as the inter-relationship between the non-cognitive skills demonstrated high association between and among non-cognitive variables. This can be used as a transformative wave in Maine's community colleges by emphasizing the development of these non-cognitive skills so important to workforce readiness. Contextualizing well-being within an academic setting, positions this perspective as a viable interpretative lens for future research regarding transformative educational reform.

Research Approach

This study offered a present-oriented phenomenological educational assessment through quantitative analysis of non-cognitive skills. The instruments used in this research measure college students' self-assessment of clusters of strengths, representive of non-cognitive skills. The SEHS-HE and ROPELOC instruments were selected because of the strengths-based, higher order constructs reflective of covital and personal effectiveness schemas. This researcher believes that these schemas are a necessary component of assessment as educators begin to define success outcomes in the 21st century.

Success measures in education typically relate to cognitive or content based scores, though this cognitive focus has not met the needs of a transformational education. This research

used a Positive psychology framework to focus on the non-cognitive continuum. This shift to a continuum of strengths, rather then deficits, attempts to understand whether community college graduates possess covitality and personal effectiveness skills required for the 21st century. Analyzing how these self-assessments may be related to each other, and to the traditional academic success measure of student's earned GPA, gives a picture of the non-cognitive schemas possessed by the graduates. Will the schemas uncovered satisfy the needs of the 21st century workforce, given the literature's emphasis on non-cognitive skills?

Utilizing this framework, overlaid onto the rural Maine community college educational institution, builds on the research of Frey and George-Nichols (2003) and Hussey (2006) who suggest a redefinition of success measures in learning. Each emphasized the need to identify and value non-cognitive strengths. These non-cognitive strengths are related to prosocial behaviors, and are found to correlate to success outcomes on both personal and academic measures. This researcher invites educators to integrate non-cognitive measures in education as a best-practice in integrated assessment.

This community college's mission is to prepare "students to achieve their educational, professional, and personal goals in a supportive environment through shared values of responsibility, integrity, and respect" (Community College site, 2016, p. 15). The values held at this institution are inherently connected with non-cognitive constructs, providing an alignment of their guiding vision and the pillars of Positive psychology. Considering the psycho-emotional and social needs of the students supports the construction of non-cognitive strengths. Given the demographic, economic, and population needs in this geographic area, identifying and building these non-cognitive strengths is a way to ensure an effective educational experience is provided. Non-cognitive skills should be specifically analyzed in order to establish fundamentally

important and highly effective practices that impact the learning of students, not only as they enter into the hallways, real or virtual, of Maine's community colleges, but specifically, as they leave those halls and enter the workforce.

Moore et al.'s (2015) protocol for implementing complete mental health assessments establishes a need for significant investment of resources, including time and training. Though this study does not hope to complete an entire mental health or universal screening, this researcher, a trained psychotherapist, attempted to mirror the methodology involved in these universal screenings in order to evaluate the interconnections between academic outcomes and covital non-cognitive skills.

This mirroring supports the conceptual frame of a social science perspective within the educational system. Ethical planning, preparation, and implementation of this study followed the six recommended steps:

1) Identifying the key participants and plan,

2) Selecting screening instruments,

3) Obtaining consent,

4) Administering the screening instruments,

5) Scoring and analyzing the screening data,

6) Following up (Moore et al., 2015, pp. 255-260).

The SEHS-HE was used to determine covitality scores, while the ROPELOC was administered to address life effectiveness schemas, both representing non-cognitive and 21st century workforce skills. Both instruments contain multiple componential non-cognitive strengths, and are clustered within higher order factors across domains. What is the variability within the scores of the graduates? Do the scores reflect adequate schemas in the areas required

for success in the 21st century workforce? Do patterns emerge that require additional attention? Is academic success (GPA), a representation of cognitive skill, correlated to these non-cognitive features? This study sought to find the answers to these questions through correlational statistics of these measures, both instruments to each other and to GPA scores. This researcher used the SPSS computational program to determine these statistical relationships.

As an adjunct faculty within the organization, this researcher adopted an insider's view by receiving primary access to the organization in which the research was carried out. This clinical inquiry research generated insights that can support positive change. Schein (1997) outlined clinical inquiry research by conveying its emphasis on: In-depth observation of learning and change processes, effects of interventions, assessment of strengths as a function of healthy systems, and a focus on deviations from healthy functioning, and theory and empiricism through developing ways to view the dynamics of a system. Coghlan (2009) furthers the description of clinical inquiry research as a method of empirical and evidence-based assessment with reflection on philosophical underpinnings. He highlights the relationship of human cognition and the "nature of the realm of practical knowing" (p. 106). This is done in order to help individuals gain "insight into their experience, make judgments about the evidence, and then to take action" (Coghlan & Brannick, 2014, p. 57).

The director of institutional research at the organization met with this researcher, and supported the study. Graduating students were targeted in order to establish a workforce readiness population and 21st century skills focus in alignment with the College's mission. Direct contact did not follow computerized questionnaires and surveys in this study. Data was provided by the students, following consent and survey participation. The institution provided student GPA to this researcher, following student graduation. Secondary access to information

and privileges were obtained via collaboration with the Institutional Research Director of the college. The Dean of the program where this researcher is employed was also included in this study's communication, as was the Academic Dean of the college.

Permissions to use the SEHS-HE and ROPELOC instruments was approved by the creators of these instruments: Michael Furlong and his colleagues, and Richards, Ellis, & Neill, respectively, per their use protocols. The SEHS-HE and ROPELOC were administered to all allowable graduating students during the month of April. More than 450 students graduated in the May 2017 commencement, so this researcher estimated similar numbers within the graduating class of 2018. The institutional researcher advised a 10-15% return rate expected on the surveys.

This researcher was the sole data examiner, and adhered to ethical and responsible methodological steps by obtaining IRB approval to perform the research from the University of New England, receiving support from the institutional researcher at the community college studied, who indicated no independent IRB panel was required. Once permission was granted by the IRB and the selected site, SEHS-HE and ROPELOC surveys were inputted into the Qaultrics survey maker to send electronically through email to the graduating students. All personal and identifying information was encrypted using appropriate encryption programs and passwords.

Letters inviting participation, describing informed consent and outlining confidentially and participant rights were sent to students within institutional email. A specific consent field was included regarding reading, understanding, and consenting to participate in the research (See Appendix B). The surveys arrived via institutional email, using the college's Qualtrics computer survey program, remaining open and available for one month as classes concluded for the semester. If any clarification was needed, this researcher used administrative support through the

office of institutional research to reduce any bias in follow-up, while eliminating surveys not submitted completely. Each instrument was administered at the same time, allowing for a one month open completion period.

Once the data was received, processed and de-identified, through the use of numerical codes as pseudonyms, the information was stored off site, in a secure location, under double-lock and key. All data was stored in a password-protected external computer storage device, and used an encryption program to provide a second line of confidentiality and safety. In accordance with psychotherapeutic protocol and IRB policy this researcher will secure all data collected for at least five years. At the end of this time, the researcher will purge all systems containing data, and will destroy these files.

Survey results were inputted into the Statistical Package for the Social Sciences (SPSS) software in order to analyze and synthesize results. Computational analytics were used to examine inferential and descriptive statistics, and to support deeper insights into the inter-instrument statistical correlates. Following the SEHS-HE and ROPELOC data collection and processing, graduating students' GPA was collected at the completion of the semester, May 2018. GPA scores were queried in relation to the higher order constructs, and the clustered strengths, to identify patterns. Secondary information such as specific demographic and programmatic information provided by the students, per the ROPELOC survey, also were queried in order to make statistical inferences regarding programmatic or demographic patterns.

Setting

The college examined is a public, non-profit, rural community college in Maine. This Maine community college was organized in 1969 by the Maine Legislature. At this time, the college had 35 full-time and 131 part-time students. The Maine Communuty College System

(MCSS), now includes seven community colleges. The institution examined is funded, in part, by State legislative appropriations and federal funds, but currently seeks funding partnerships with prospective employers of the graduating students, in order to create partnerships across systems.

MCCS's roots extend to the Maine Vocational Technical Institute, which first served students in the capital area in 1946. In 2003, these technical and vocational colleges were transformed into comprehensive community colleges. The transition from technical to community college incited massive system growth resulting in 80% increased enrollment.

For the 2015-2016 academic year, approximately 2,500 full and part-time students were enrolled in credit courses, at the College. The student to instructor ratio is currently, 18:1; though a large percentage of the instructors are adjunct or "contingent" faculty. Today, the college offers more than 35 programs of study ranging from two-year associate degrees to certificates, as well as offering continuing education courses, and business and industry outreach programs (KVCC, 2016). The college has two locations and is geographically split along program lines. The growth expanded MCCS's mission, to highlight both access to higher education and student success, with expectations that social justice, positive citizenry, preparation for employment and potential continuance of furthering education are predicted outcomes (Institutional Assessment-MCSS Strategic Plan, 2016-2020). Aligning an educational experience that fosters these very commitments is a stated mission. However, there is no measurement in place to ensure that non-cognitive skills are a result of the education at this college.

Employers in Maine, at all levels, are demanding increasingly non-cognitive skill proficient graduates (Maine Community College System Publications and Reports, 2017). Whether successful grades are achieved or not, interpersonal skills and psychological capital

remain to be measured in graduates moving to the job sector. The presentation and practice of these non-cognitive soft skills require specific targeting. This research identified the skills present using the non-cognitive covitality (SEHS-HE) and life effectiveness (ROPELOC) instruments, and discovered little alignment with the school's stated mission and outcomes.

Participants/Sample

At any given time, approximately 2,450 full-time (40.5%) and part-time (59.5%) students will be enrolled at this community college, of which 1,610 are degree seeking. The population is comprised of approximately 66% female and 34% male, with an average age of 28 years (KVCC, 2017). Study participants were selected based on eligibility for graduation in May 2018. They were between the ages of 18-65. All participation was voluntary and clear consent was obtained, with confirmation that involvement would not impact any course work or course outcomes. Using this sampling approach, the study required students to answer the two non-cognitive questionnaires: SEHS-HE and the ROPELOC. The researcher discarded any inappropriately completed or incomplete surveys. If a student returned completed surveys, but did not graduate, their information was eliminated from analysis.

The statistical analysis of these instruments attempted to draw parallels using the research reviewed, and used the quantitative measure of grade point average (GPA) as the primary academic outcome measure. This research offers a nuanced exploration of intra-personal workings measured by self-assessment. Intra-personal workings represent self-schemas, that is: mechanisms that are often not evident to others and are part of the personal experience. Self-schemas develop as a result of system enculturation and learning, making this quantitative research phenomenological in nature. This methodology becomes a way to capture that present-oriented student experience quantitatively, as the individual perceives it. This approach allowed

for measureable patterns and inference analysis of the non-cognitive items which the subject

identified.

In summary, the tools for this study included two Qualtrics formatted surveys emailed to

graduating students during the month of May, 2018 (See Appendix A). The survey responses

were inputted into SPSS 25, and were statistically examined to assess for the relationship

between these non-cognitive skills and GPA, and to each other through inter-instrument

correlation.

Data

The Social Emotional Health Survey-Higher Education (SEHS-HE) measures the

multiple dimensions of covitality, and is rooted in a Positive psychology framework that

emphasizes a developmental systems based social-emotional health model. The SEHS-HE scale

started with 72 items. Testing on several samples of college students, revisions, and confirmatory

analysis procedures resulted in a completed questionnaire, refined to 36 items. These 36 items

include four latent traits with respective subscales (Furlong et al., 2014; Furlong, Gilman &

Huebner, 2014; Renshaw et al., 2014). Initial experiments and research using the tool provided

evidence that the SEHS-HE's composite score positively correlates with students' subjective

well-being (concurrent validity r=.72 and predictive validity r=.65) and negatively correlated

with psychological distress (concurrent validity r=-.56 and predictive validity r=-.45). The

measures for well-being were represented by scores on the Life Satisfaction Survey, and the

Positive and Negative Affect Schedule (PANAS) (See Figure 3.2). The dual factor model was

employed to distinguish negative affect scales and positive affect scales, on these measures

(Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014).
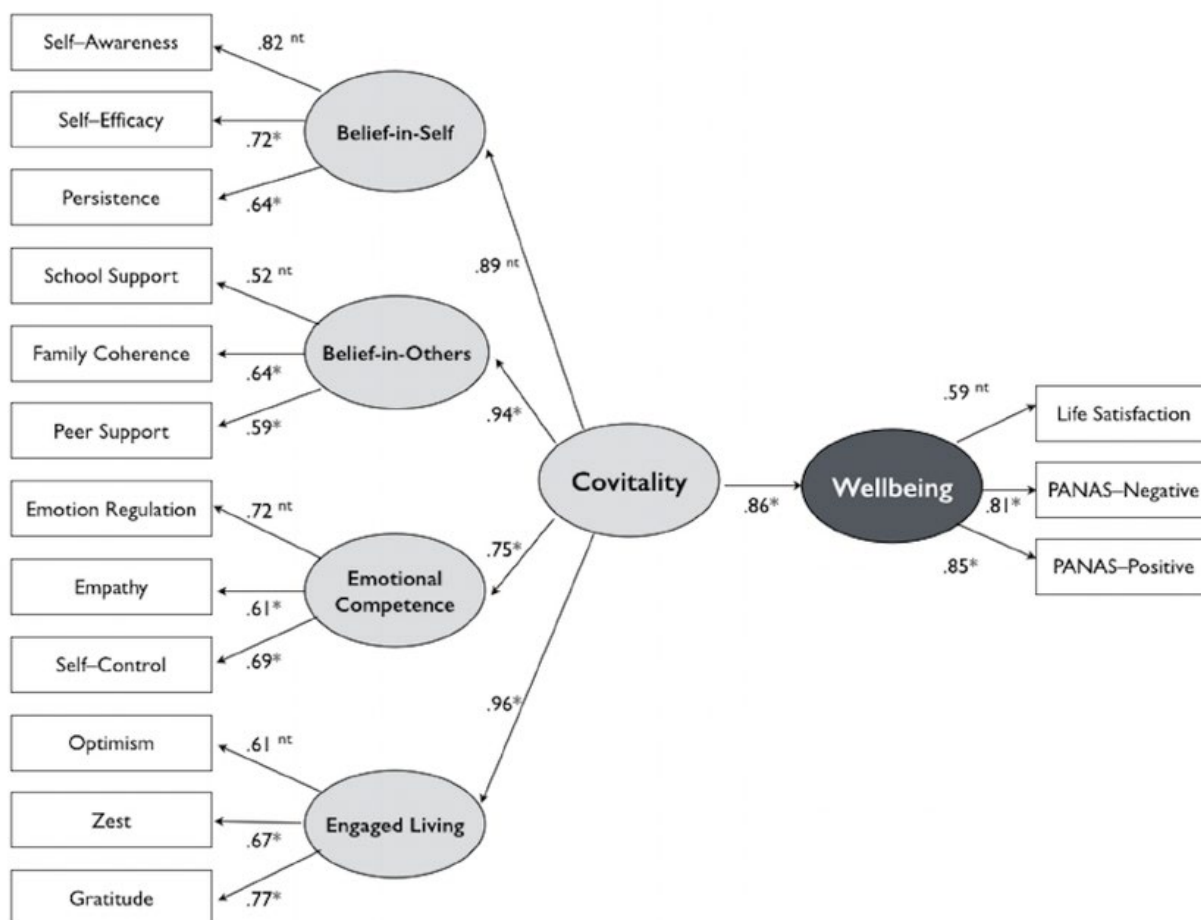
Figure 3.2: Confirmatory Analyses of Covitality Construct with Well-being via Life Satisfaction, and Positive and Negative Affect Surveys. Lee, You, & Furlong, 2016.

Furlong et al. (2013) were the first to investigate the validity and utility of their fundamental strengths-based covitality construct. Conceptualizing this construct as "the synergistic effect of positive mental health resulting from the interplay among multiple positive-psychological building blocks" (p.1011) they used confirmatory factor analyses, invariance analysis, and latent means testing to support the theoretical model. This statistical testing validated the instrument for use within education. They found that:

Results from a path-modeling analysis indicated that covitality was a strong predictor of students' subjective well-being (operationalized as a composite of life satisfaction, positive affect, and negative affect), and findings from additional concurrent validity analyses indicated that adolescents' covitality level was significantly associated with self-reported academic achievement, perceptions of school safety, substance use, and experiences of depressive symptoms. (Furlong et al., 2014, p. 1)

The relevance of covitality was explored within the literature review, and supports a redefinition of success measures within community colleges, inclusive of content but acknowledging the applied, non-cognitive skills, so required during this era.

The 12 subscales of the SEHS-HE are based on research that integrate self-determination theory (Bandura, Barbaranelli, Capara, & Pastorelli, 1996; Durlak et al., 2011; Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013), childhood resilience research (Larson, 2000; Masten, Cutuli, Herbers, & Reed, 2009), socio-emotional learning (SEL) literature (Greenberg et al., 2003; Zins, Bloodworth, Weissberg, & Walberg, 2007), and Positive psychology scholarship (Furlong, Gilman, & Huebner, 2014; Kirschman, Johnson, Bender, & Roberts, 2009) explored within the literature review.

The Review of Personal Effectiveness with Locus of Control (ROPELOC) consists of 14 scales representative of 21st century non-cognitive skills. The ROPELOC and 21st century skills include interpersonal and intrapersonal skills and mindset aptitudes. Locus of Control measures are included in the ROPELOC (Richards, Ellis, & Neill, 2002). These reflect accountability and attribution qualities.

The ROPELOC's internal consistency scores range from .79 to .93 (Richards, Ellis, & Neill, 2002), and exploratory and confirmatory factor analysis support higher order clustering of these strength-based structures. This is important because it demonstrates lasting personality traits rather then state-based measures. Richards, Ellis, and Neill (2002) liken the measure to a behavioral and psychological assessment rooted in experience-based learning. The self-assessment format allows for self-schema analysis in these behavioral and psychological domains. Again, recognizing identity anchoring in schemas construction. Richards, Ellis, & Neill (2002) developed the ROPELOC survey as an instrument that has been "specially designed to examine the types of changes often aimed for and achieved by experiential training programs" (p. 1). It is designed to gather perspectives on key non-cognitive outcomes of participants where the "outcome results can be meaningfully applied by practitioners and researchers" (p. 1) in the evaluation of experiential learning.

The ROPELOC's first trial focused on high school students (n=1250), and resulted in internal reliabilites (Cronbach alpha) for its 14 subscales (between .79 and .93) with an average internal reliability of .84 (Richards, Ellis, & Neill, 2002). The second trial resulted in similar reliabilities, scoring reliably higher for older students (median = .86). These authors further advise that the "instrument can be used with most age groups, and in various applications from corporate managers through to primary school–aged children at risk" (Richards, Ellis, & Neill, 2002, p. 3). The ROPELOC factor structure is supported, and the internal reliability measures are very strong, successfully discriminating over a wide range of non-cognitive dimensions of life effectiveness, and making it a useful tool in the assessment of non-cognitive schemas. The traits and domains relative to the ROPELOC measure are identified below (See Figure 3.3):

ROPELOC Factor	Description
Active Involvement	Use action and energy to make things happen.
Cooperative Teamwork	Cooperation in team situations.
Leadership Ability	Leadership capability.
Open Thinking	Openness and adaptability in thinking and ideas.
Quality Seeking	Put effort into achieving the best possible results.
Self Confidence	Confidence and belief in personal ability to be successful.
Self Efficacy	Ability to handle things and find solutions in difficult situations.
Social Effectiveness	Competence and effectiveness in communicating and operating in social situations.
Stress Management	Self-control and calmness in stressful situations.
Time Efficiency	Efficient planning and utilization of time.
Coping with change	The ability to cope with change.
Overall Effectiveness	The overall effectiveness of a person in all aspects of life.
Internal Locus of Control	Taking internal responsibility for actions and success.
External Locus of Control	Accepting that external issues control or determine success.
Control Items	Control scale consisting of stable personal preferences. Allows baseline for change in stable areas for comparison with changes in other ROPELOC dimensions.

Figure 3.3: Review of Personal Effectiveness (with Locus of Control) THE ROPELOC Factors. Richards & Neill, 2000.

The purpose of using both scales is twofold. First, inter-test rating validation revealing identity anchoring within the non-cognitive traits; and second, non-cognitive emphasis as a fundamental component of trait-based inter- and intra-personal psychological mechanisms. Additionally, using GPA score supports analysis of cognitive measure in relation to non-cognitive measures. GPA analysis may, in fact, reveal that higher GPA is related to specific traits, specific clusters, specific domains, or have no correlation to non-cognitive measures. Using the composite scores on each instrument is the first level of assessment. In addition to these composite scores, the subscales comprising the latent factors within the SEHS-HE and ROPELOC were queried, utilizing descriptive and inferential statistics. This academic shift to both content and applied skills (cognitive and non-cognitive skills) embodies the shift that

Positive psychology's dual factor model captures: framing education, not as an either/or institution, but one that simultaneously engages both continuums of learning and experience: remediation/strengths, applied/content skills, non-cognitive/cognitive skills, and practice/theory.

Creswell (2012) supports this quantitative approach when exploring the significance between and among variables. The predictive value of these scores, in relation to academic success (per GPA measure) and 21st century success is a fundamental step in impacting whole systems related to learning experiences. Cooper and Schindler (2013) note that quantitative research design is the appropriate methodology for this comparison of variables and support a quantitative approach in research, describing the difference between methodologies in the following way:

> Quality is the essential character or nature of something; quantity is the amount. Quality is the what; quantity the how much. Qualitative refers to the meaning, the definition or analogy or model or metaphor characterizing something, while quantitative assumes the meaning and refers to a measure of it. (p. 129)

Cyclical analysis was an ongoing function of the research study, implementing reflection and problem-solving cycles used in clinical therapy. Coghlan and Brannick (2014) describe this methodological tool as "cycles of action and reflection." They define this as a way to describe how "action influences reflection, and reflection influences action" (p. xx). Using cyclical analysis permits a link for recommendations for policy and practice.

Analysis

The literature review has emphasized whole-school systemic changes and cultivation of covitality as not only possible, but as imperative due to the economic and socio-emotional needs of students continue to raise concerns (Shocet, Smith, Furlong, & Hormel, 2011; Suldo &

Shaffer, 2008). These non-cognitive skills have previously been absent from the bulk of educational research, but realigning educational outcomes to success outcomes inclusive of, and beyond, content measures is required if lasting transformational impacts of education is desired. Strengths identification and assessment present an important alternative to the deficit model of old, and lends itself to the growing body of evidence-based research in education. This strengths-based shift beckons the evaluation of the learning experience as a developmental and co-created process, and identifies non-cognitive, individual psychological constructs that are related to academic and workplace success.

These research questions are predicated on the need to assess non-cognitive skills in programmatic outcomes within community colleges. This quantitative analysis is intended to supplement the anecdotal and qualitative studies associated with research in education. While qualitative research may increase the richness of analysis in understanding these complex iterative processes, it is outside the scope of the study. This quantitative research design allows for the quantification of deeply qualitative beliefs and perceptions. The quantitative methodology is pivotal to innovating and bridging the gap between psycho-social and emotional research from social sciences and cognitive/content based research found in education. This approach reveals the intersections of opportunity between institutions, experiences, and traits through the use of psychometrics. Additionally, this research permits contextualized and situated data collection of schemata through self-assessment. This allows focus on self-appraisals of the four latent constructs related to covitality using the SEHS-HE, and focus on the non-cognitive components of student's perception of personal effectiveness, through the ROPELOC measures.

Positive psychology uses social science paradigms to better understand the scholarship of teaching and learning (SoTL), asking for the incorporation of such non-cognitive assessment

measures into higher education (Diener, Seligman, Choi, Oishi, 2018; Duckworth & Seligman, 2017; Park & Peterson, 2008; Seligman, 2018; Seligman et al., 2009; Wright, 2017). Identifying non-cognitive schemas, related to subjective well-being indicators that so often correspond with academic success supports the quantitative approach used in this study to analyze these inter-and intra-personal schemas. As established in the literature review, non-cognitive psychometrics allows for assessment of self-perceptions of one's own strengths and traits related to psycho-social-emotional schemas. This allows for non-cognitive schema analysis so essential for success outcomes within school, work and play.

Given this researcher's psychotherapy training, using a strengths-based emphasis to assess what works well and supports optimal functioning within a counseling room, appears an easy leap to apply to the community college classrooms, where students are inherently challenged by numerous psycho-social stressors as non-cognitive schemas are challenged and (re)constructed. Schemas are constructed by shared engagement with an array of variables, from home, work and educational dynamics. Individual thoughts about past and portended futures, experiences with self and others, and developmental and learning interactions, also impact these schemas. An individual's schemas are co-created during these recursive learning experiences. The schemas and individual builds are the stories each tells themselves. These schemas become a heuristic for the stories within which each enact their own agency. Though what caused the creation of these non-cognitive components cannot be specifically determined, researchers can quantitatively identify the presence of these schemata within a population. In education, it is crucial that they are examined.

Outcomes measures geared toward engagement with course content and curricula do not consider these non-cognitive schemas. The use of covitality psychometrics and the Likert scales

associated with the SEHS-HE and ROPELOC allow for the emphasis to shift to quantitative research that identifies how variables are related, through the use of experimental design (Creswell, 2012). Identifying the relationship among variables can reveal how these non-cognitive constructs may impact one another and GPA, allowing for future research to build off the findings. This quantitative study measured the strength of the relationships between and among covitality scores, GPA, and the ROPELOC, in so doing, allowed inferences regarding the community college provision of experiences that build non-cognitive workforce skills. A correlational analysis reveals the strength of the relationships among these complex psychometric components.

Kalla (2011) summarizes how correlational analysis identifies relationships through 1) positive correlation: an increase in one measure leads to an increase in the other; a decrease in one leads to a decrease in the other; 2) Negative correlation: occurs when one score goes up, the other goes down, and vice versa; 3) No correlation exists when the variables change independent of one another, a change in one variable does not lead to a change in the other. From these types of correlations, a coefficient is calculated. The score reflects a continuum on a scale from +1 to -1. Interpreting these scores reveals 1) a value close to +1 indicates a strong positive correlation, 2) a score close to -1 reflects a significant negative correlation; and, 3) a score near zero indicates no correlation (Kalla, 2011).

Additionally, descriptive and inferential statistics was employed. Descriptive statistics are defined as "values that organize and describe the characteristics of a collection of data" (Salkind, 2014, p. 464) and are useful for describing and representing information, allowing analysis of multiple characteristics within a larger data set. Inferential statistics are "tools that are used to infer characteristics of a population based on data from a sample of that population" (p. 465).

Inferential statistics are useful for demonstrating patterns and making predictions within data sets. Variability analysis is a descriptive tool that will be engaged, as well. The calculation of correlational coefficients will be illustrated through a correlation matrix, found in Chapter Four. Levels of measurement, reliability information, and Cronbach Alpha scores will also be examined here.

Self-ratings are among the most commonly used in socio-emotional research and psychotherapeutic study. Self-ratings can be used for measuring non-cognitive schemas, as they support insights into a student's mental models of their own socioemotional skills, attitudes, social behavior, conduct, and emotional states (Kyllonen, 2012). The surveys used included basic Likert scoring. The SEHS-HE has 36 questions on a scale of 1-6 (Very much unlike me-Very much like me) (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014). The ROPELOC is assessed using a 1-8 (False, Not like me-True, Like me) point Likert scale, and is comprised of 45 questions (Richards, Ellis, & Neill, 2002). These Likert scale instruments ask students to rate themselves on certain non-cognitive factors. A limitation of Likert self-assessment includes the subjectivity inherent in these labels which are open to interpretation and result in some difficulty with analysis. Social desirability and self-assessment bias may play a role, as well. In fact, research reveals that others' assessments, despite measuring personal factors, are generally more accurate, less biased, and more predictive then self-assessments (Connelly & Ones, 2010). Teacher assessment or family member assessment are relevant considerations; however, this study centered on self-assessment as a way to survey student schemas related to their own non-cognitive skills, thereby accepting the limitations that may exist within the phenomenological nature of these psychometric participant responses. Self-

perceptions provide insight into what the student believes about self and others. Additionally, it provides insight into the organization of students' non-cognitive mindsets.

Ultimately, to summarize this section, positive traits are formed by positive experiences through positive institutions. These are the Positive psychology pillars (Peterson, 2006; Peterson & Seligman, 2004; Watkins, 2015), which propose that the strengths and traits measured are created by repetitive experiences in an individual's interactions. These experiences and how they are interpreted are used to create both cognitive and non-cognitive schemas, this is called learning. Strong non-cognitive schemas can be considered as psychological assets or capital, interpersonal and intrapersonal habitus, and are related to expectations of self and others (Avey, Reichard, Luthans, & Mhatre, 2011; Luthans, Avolio, Avey, & Norman, 2007). Schools, specifically community colleges, must understand this framework in order to support the development of students' schemas, specifically in connection to preparing students for the 21st century.

Though it may be argued that an emphasis on self and education are western-centric values, skewing multicultural generalizability, the research relative to this and similar studies, provides a starting point for conceptualizing success as a psycho-social process.

Participant Rights

Research in human behavior and social sciences requires the utmost expectation of ethical study. This researcher's clinical license also includes commitment and care to ethical requirements to which this researcher is bound. Privacy and confidentiality is required when exploring psychotherapeutic and intrapersonal/interpersonal perspectives. This research was carried out with these same ethical expectations.

Participant data, the organization, and all stakeholders were protected through policy, protocols, and permissions. The security of the data was ensured through off site, encrypted data storage and the de-identification of details. Additionally, all participants had the time and freedom to consider consent, and could revoke consent or remove themselves from participation at any time, creating a clear voluntary status role regarding participation in the study. The clarity and transparency of communication, purpose, scope, and questions were of foremost importance, and all contact and documentation has been tracked and documented. Consent documents, along with a copy of statements of confidentiality and privacy, and survey questions, are found at the end of this dissertation (See Appendix B).

As part of this study, informed consent ensured respect for individual subjects through the transparency in the provision of information, the comprehensive IRB application process, and cohesive organization of the data requested and collected, along with the voluntary nature of individual involvement. As a thorough assessment of risks and benefit, this researcher did not identify a risk of participation. As a psychotherapist, however, this researcher is aware that any introspection or request for experiential perception may trigger an individual, creating an opportunity for psychological instability. Though the strengths and values-based emphasis used in this study minimizes this risk, it is worth mentioning, given the psychological self-schemas at the heart of the research. The possible risk within this study is minimal, as the depth of the information requested is general in nature, strengths-based, did not request detail, and is quantified through a Likert scale in order to keep a more objective perspective. The benefit of the research includes practice of social-emotional learning and self-awareness as it relates to a students' experience of self within a larger educational system and interrelated systems in which the student functions. This 'favorable ratio' justifies rationale for this research.

In accordance with the National Research Act (1974) and the Belmont report (1979), and per ethical, legal, professional, and organizational regulatory policy, the following areas of basic ethical principles are held in high and rigorous regard:

Respect for persons: Respect for persons operates from a position that respects individual autonomy with the self-determination of will, where this researcher will not interfere with the individual's freedoms nor withhold information necessary for the individual to make clear and autonomous decisions. Where self-determination, autonomy, incapacitation may exist, this researcher will protect and safeguard individuals whom cannot act in their own agency, restricting age guidelines in order to ensure self-guardianship, eliminating any prospects of punishment or privilege for participation, and withdrawing participants as is reasonable with their request.

Concern for welfare: Beneficence is a concern for welfare, and an ethical expectation of researchers. This study acts in accordance with respect and security of well-being. This obligation captures two significant rules: "(1) do not harm and (2) maximize possible benefits and minimize possible harms" (Office for Human Research Protections, 2016, p. 2). As a psychotherapist, the driving force of this research motivates her to target and emphasize well-being, especially for long term benefits. The minimization of risk has been carefully acknowledged through encryption, confidentiality, and informed consent. Recognition of the ethical requirements regarding the lifecycle of data management, confidentiality and appropriate use, and availability of the research through the lifecycle of the data is also acknowledged and safe-guarded.

Justice: Justice considerations are the primary motivator for the sample size selected. Community colleges have become the education centers for those least likely to be educated, the

marginal or challenged student, either traditional or non-traditional, who is, often, under-prepared and at the threshold of change within the College environment. Sending covitality (SEHS-HE) and life effectiveness (ROPELOC) assessments to all graduating students provides each person with equal access to interpersonal and intrapersonal insights, is designed to address each person's individual experience, does not select or prioritize which provides access and benefit in accordance with the individual's own efforts, and is based neither on contribution or merit which captures the requirement for "fairness in distribution" (Office for Human Research Protections, 2016, p. 2). No punishment or privilege was associated with participation in this research study, nor was there exploitation or pressure to participate.

Potential Limitations

The online delivery format, based on access to the collge email system poses some limitations. Maine's geographical regions may have inconsistent connectivity issues. Additionally, with the email survey format it is unclear whether the addressed recipient is the individual that filled out the survey, or whether the questions were thoroughly read and understood rather then answered randomly.

To clarify the inconsistent vocabulary currently used across fields, this research used the operational definitons of terms identified in Chapter One. Integrating disparate fields requires the researcher to borrow the vocabulary specific to that field, and synthesizing these meanings into higher order constructs is an important framing tool offered by Positive psychology. As the literature review demonstrates, words such as psychological capital, habitus, behavioral economics, ethos, and covitality represent higher order terms comprised of componential features. Establishing this overlap compensated for the challenges represented by the

transdisciplinary nature of the theoretical and practical application of the covital framework supported an analysis that reflects the depth and breadth of the relevant literature.

Though the terms across fields are not the same, many can be used interchangeably. Ideas such as connectedness and belonging, grit and persistence, and multiple single-trait conceptions challenge consistency in operational definitions of higher order factors, such as are measured by the ROPELOC and SEHS-HE scores. This dissertation's definition of terms is a helpful key with which to examine the definitions used in this research. The variability in definitions is not related to differences in operational meaning, but rather indicative of the theoretical orientation of researchers, respective to their fields. Important themes comprising non-cognitive constructs remain stable across fields of research, despite the terms used to capture these constructs.

Everyone is a stakeholder. Throughout time, education has served a strengths building role. Non-cognitive strengths require the same focus as cognitive strengths when evaluating 21st century workforce skills. Individual development, group level engagement, and personal and professional outcomes are intertwined with these non-cognitive strengths and values. This approach allows for strengths-based foci, which can assist students, teachers, administration, collaborative community contacts, professional and career services, and philanthropic and financial resources in understanding the transformation possibilities at the intersections of education: positive institutions can create positive experiences, which reinforce positive traits.

Conclusion

This quantitative study measures the non-cognitive skills of graduating community college students while applying statistical methodology to identify the association among the variables, subjecting the data to inferential and descriptive analysis. The research problem concentrates on the need to apply a social science framework onto the field of education, in so

doing redefining success outcomes in the 21st century. Academic outcomes in the community college setting traditionally represent content measures related to curriculum based objectives. This research shines a light on the applied or non-cognitive skills grouped in covital clusters, by re-examining success using the socio-emotional systems framework of Positive psychology.

The literature review demonstrates the importance of strengths and values-based approaches that place covital non-cognitive skills within a politico-economic and psycho-socio-emotional realm pivotal to 21st century workforce success and overall personal well-being, making this level of analysis which incorporates non-cognitive skill development essential to any substantive educational reform (Suldo & Shaffer, 2008; Shocet, Smith, Furlong, & Hormel, 2011). Chapter Four engages in a review of data analysis and results. Chapter Five concludes with interpretations, implications, and recommendations.

CHAPTER 4

RESULTS

This dissertation explored an emergent psychodynamic concept in a community college setting, using an integrative conceptual framework. This study used two non-cognitive instruments to assess the non-cognitive skills of responding community college graduates. The rationale for identifying these psychological dispositions lies in the integration of psychological and educational intersections, leading to workplace readiness. This correlational study posed the following questions:

1) What are the self-assessment scores of the community college students on the Social Emotional Health Survey-Higher Education and the Review of Personal Effectiveness with Locus of Control?

2) What is the relationship amongst these non-cognitive measures and graduating students' GPA?

3) What patterns emerge when inter-instrument comparisons are made?

The focus of this quantitative study was the relationship between composite and component psychometric scores of covitality (revealed by the SEHS-HE) and 21st century workforce skills (revealed by the ROPELOC), attempting to correlate these with student GPA (the primary assessment of success in this community college). The hypotheses examined were:

Hypothesis$_1$: Covitality composite score will positively correlate to GPA.

Null Hypothesis$_1$: There will be no relationship between Covitality and GPA.

Hypthesis$_2$: ROPELOC composite score will positively correlate to GPA.

Null Hypthesis$_2$: There will be no relationship between ROPELOC composite score and GPA.

Hypothesis3: Composite Covitality score will positively correlate to Composite

ROPELOC score.

Null Hypthesis3: There will be no relationship between composite scores (See Figure

4.1).
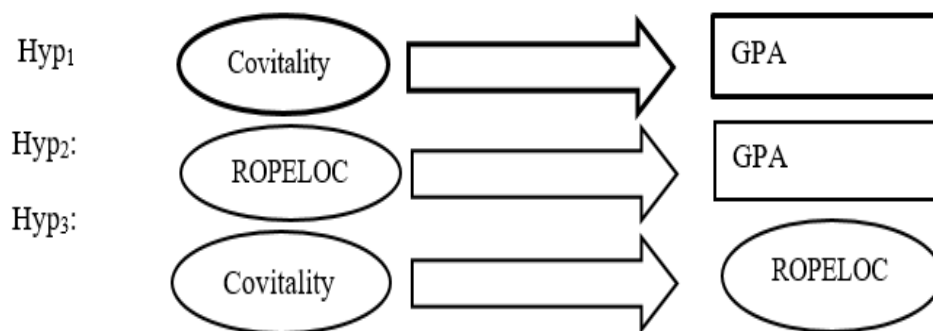
Figure 4.1: Hypotheses Examined

Analysis Method

The community college, similar to most other institutions of higher education in America,

functions primarily using grades as the most comprehensive assessment of skills and strengths.

This study assessed whether specific non-cognitive schemas, self-assessed using non-cognitive

instruments, were represented within students' GPA scores. It is clear that grades represent the

demonstrable cognitive skills of the student, and culminate in students' cumulative grade point

average (GPA). If the college's purported mission and values include non-cognitive aspects of

student development, the implication is that these non-cognitive strengths are included within the

primary outcome measure of successful completion, cumulative GPA. If workforce readiness is a

stated mission, and workforce literature highlights non-cognitive skills, then it follows that

community colleges, as workforce readiness institutions, are assessing for these skills. Of the 401

community college graduates from this institution in May 2018, 226 students received the emailed surveys, based on the Family Education Rights and Privacy Act (FERPA) guidelines restricting identification and reporting of student attendance at the college for reasons of privacy and protection. If students elected FERPA protection, they were excluded from receiving the survey. Of the 226 students receiving the email and survey, and after voluntary completing informed consent, a total of 45 graduates (approximately 20%) successfully completed the study surveys.

This researcher disaggregated the information, eliminating identifiers to ensure de-identified data, and coded the data from alpha to numeric labels transferable to the SPSS statistical analysis program. Incomplete data was eliminated. The data was cleaned by editing columns with numeric labels (e.g. male=0, female=1) and organizing the information in composite and component constructs (e.g. BiS, BiO, Emotional Competence, and Engaged Living for the SEHS-HE; and Personal Abilities and Beliefs, Social Abilities, and Organization Skills, and Active Involvement for the ROPELOC). The higher order constructs of both instruments were organized to include their respective component parts. Composite scores, and construct scores could thereby be separated and analyzed for more thorough componential analysis.

The survey respondents represented nineteen different academic programs at this institution, with the highest concentration of respondents (n=8) coming from the Associate of Nursing program. Thirty-seven respondents (n=37) identified as female (82%), and eight respondents (n=8) identified as male (18%). The average respondent age was 37 years, ten years older than the average age at this institution. The following table lists the academic program, gender, age, and GPA mean by program of every responding graduate (See Table 4.1).

Table 4.1: *Data Findings for Instrument Scores by Program*

Program	Number (N=)	Male	Female	Average Age	GPA Program Mean
Accounting	4	0	4	38	3.79
Applied Electronics & Computer Technology	1	1	0	32	3.71
Business Marketing	2	0	2	25	3.47
Computer Systems Integration	1	0	1	52	3.76
Culinary Arts	2	0	2	21	2.36
Early Childhood Education	2	0	2	32	
Electrical Technology	1	1	0	46	3.93
Energy Services Technology	1	1	0	55	3.86
General Sciences	2	0	2	25	3.07
Health information Management	5	0	5	49	3.36
Liberal Studies	3	0	3	41	3.79
Medical Assisting	1	0	1	35	3.75
Mental Health	2	0	2	41	3.47
Nursing	8	1	7	41	3.30
Occupational Therapy	2	1	1	31	3.25
Physical Therapy Assistant	4	0	4	31	3.36
Precision Machine Technology	1	1	0	27	3.66
Radiological Technology	1	0	1	19	3.97
Welding	2	2	0	37	3.23
19 Different Programs	Total: N=45	Male (N=8) 18%	Female (N=37) 82%		

Findings: Presentation of Results

In keeping with this study's methodology, query analytics and correlations were

conducted using SPSS Statistics for Windows, Version 25. To aid in the interpretation of results,

if the p-value is less than or equal to the alpha (p=< .05), then the null hypothesis is rejected, and

there is statistical significance. If the p-value is greater than alpha (p=> .05), then the null hypothesis cannot be rejected, and the results are statistically insignificant. Additionally, an even stronger level of significance is demonstrated if the p-value is less than .01 (p= <0.01). Data analyses was completed and the results are illustrated below, using the research questions and hypotheses to guide and organize the results.

Research Question One

The first research question addresses the self-assessment scores of the community college student respondents on the Social Emotional Health Survey-Higher Education and the Review of Personal Effectiveness with Locus of Control. Twenty-six non-cognitive strengths were identified and measured within this study, twelve constructs within four domains related to the SEHS-HE and fourteen components within four domains related to the ROPELOC. These 26 non-cognitive skills are related to 21st century workforce skills (See Figure: 4.2).
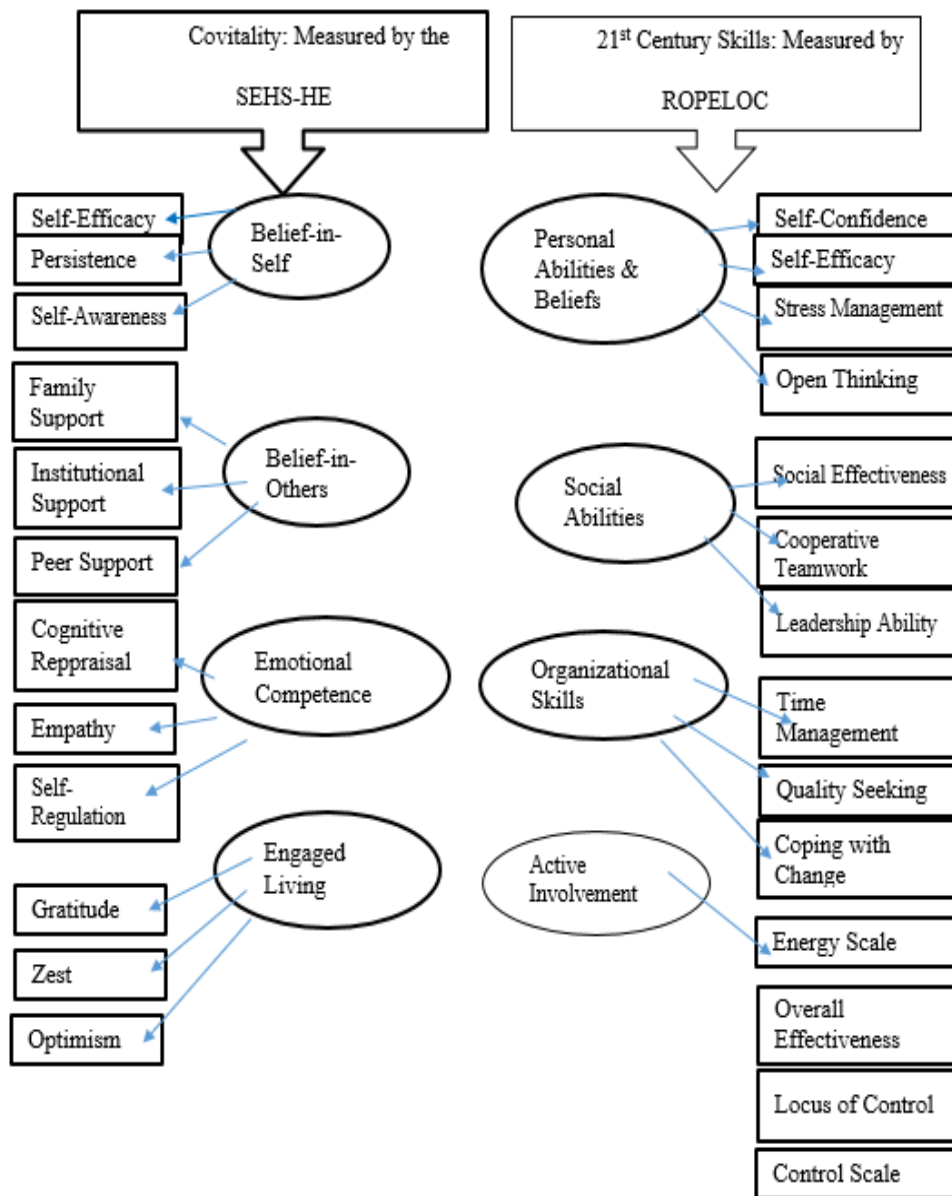
Figure 4.2: 21st Century Non-Cognitive Workforce Skills Analyzed

The mean score on the SEHS-HE Covitality composite, for all respondents, was 177.64 with a standard deviation of 19.7. One standard deviation creates the high and low ranges, specific to this population. The average score of 177 is contextualized by the standard deviation: one standard deviation below the mean represents a low score (157.94) for this population, and one standard deviation above the mean represents a high score (197.34). The lowest individual student Covitality (SEHS-HE) composite score was 108, and the maximum individual score was 212 (See Table 4.2). The highest mean score achieved on the SEHS-HE, by program, is represented by the two respondents in the Culinary Arts program (n=2) with an average score of 211, exceeding the high range score for this population by 13.6 points. The lowest scoring program on the SEHS-HE was the Radiological Technology program with only a single respondent (n=1) scoring 151, six points lower than the low range score. A low score of 108 signifies few non-cognitive skills present in the measure of this student's self-schemas, where Belief-in-Self, Belief-in-Others, Emotional Competence, and Engaged Living with the accompanying 12 non-cognitive strengths are not frequent in this student's self-report. In fact, 18 (n=18) students scored similarly, in this below average (<177) range, resulting in 40% of the responding population demonstrating less than average non-cognitive self-perceptions on the SEHS-HE instrument. What is more, this responding population scored 38 points less than the ideal score, on this measure, signifying that on average, every graduating respondent program scored less than ideal on this non-cognitive measure.

Table 4.2: *Composite, Construct, Age and GPA Data Findings*

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	45	2.36	4.00	3.4418	.44711
AGE	45	19	65	37.07	12.451
Belief in Self	45	15	54	44.42	6.323
Belief in Others	45	21	54	42.27	7.548
Emotional Competence	45	37	54	45.53	5.030
Engaged Living	45	22	54	45.42	5.937
Covitality Composite	45	108	212	177.64	19.739
ROPELOC Composite	45	160	322	268.93	29.804
Personal Beliefs	45	38	95	77.82	10.154
Social Abilities	45	33	71	56.69	9.115
Organizational Skills	45	29	72	56.84	8.169
Active Involvement	45	20	46	37.02	5.566

The mean scoring for each respondent on the SEHS-HE is demonstrated, below (See Table 4.3).

Table 4.3: *Data for SEHS-HE Instrument*

Descriptive Statistics for Covitality (SEHS-HE) Instrument

	N	Minimum	Maximum	Mean	Std. Deviation
Belief-in-Self (BiS)	45	15	54	44.42	6.323
Belief-in-Others (BiO)	45	21	54	42.27	7.548
Emotional Competence	45	37	54	45.53	5.030
Engaged Living	45	22	54	45.42	5.937
Covitality Composite	45	108	212	177.64	19.739

The ROPELOC mean for all programs and respondents (N=45) was 268.93. The lowest

ROPELOC composite score was 160 and the maximum score was 322 (See Table 4.4). This

maximum score reflects less than ideal strengths-performance due to the locus of control scale

(ideal score 3, possible score 24). The standard deviation of the ROPELOC scores was 29.804,

showing more variability than in the SEHS-HE. These standard deviations scale the ROPELOC

scores as follows: Low 239.126, Average score as 268.93, and High score as 298.734. Given this

range, 16 students scored below average (<268.93) representing 35% of the responding

population reporting less than average self-perception of non-cognitive strengths. This measure

also revealed that all of the respondents scored at least 35 points less than the ideal on this non-

cognitive measure. The three students responding from the Liberal Studies Program (n=3) scored

the highest average ROPELOC score with a mean score of 295, which falls in the high range for

this population; and, five students (n=5) responding from the Health Information Management

program scored the lowest on the ROPELOC with a score of 229, 10 points below the standard

deviation which creates the low range for this population.

Table 4.4: *Data for ROPELOC Instrument*

Descriptive Statistics for the ROPELOC Instrument by Domain

	N	Minimum	Maximum	Mean	Std. Deviation
Personal Beliefs	45	38	95	77.82	10.154
Social Abilities	45	33	71	56.69	9.115
Organizational Skills	45	29	72	56.84	8.169
Active Involvement	45	20	46	37.02	5.566
ROPELOC Composite	45	160	322	268.93	29.804

One time measures are used in this study to demonstrate an after-educational experience

score, as graduating students are the respondents. Anything higher or lower than the *ideal*

numbers represent non-cognitive skill performance as represented by the high-average-low range

suggested by the mean score and the standard deviations of this population. Table 4.5

demonstrates the composite score descriptives.

Table 4.5: *Descriptive Data for Instrument Composite Scores*

Descriptive Statistics for Composite Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Covitality	45	108	212	177.64	19.739
ROPELOC	45	160	322	268.93	29.804

The intra-instrument correlations can be seen here (See Table 4.6 and Table 4.7). These strong

intra-instrument correlations represent good internal consistency and validity measures.

Table 4.6: *Intra-instrument Correlations of SEHS-HE*

		Belief-in-Self (BiS)	Belief-in-Others (BiO)	Engaged Living	Emotional Competence
Belief-in-Self (BiS)	Pearson Correlation	1	.251	.618**	.591**
Belief-in-Others (BiO)	Pearson Correlation	.251	1	.673**	.461**
Engaged Living	Pearson Correlation	.618**	.673**	1	.483**
Emotional Competence	Pearson Correlation	.591**	.461**	.483**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.7: *Intra-instrument Correlations of ROPELOC*

		Personal Abilities	Social Abilities	Organizational Skills	Active Involvement
Personal Abilities & Beliefs	Pearson Correlation	1	.625**	.853**	.769**
Social Abilities	Pearson Correlation	.625**	1	.624**	.841**
Organizational Skills	Pearson Correlation	.853**	.624**	1	.720**
Active Involvement	Pearson Correlation	.769**	.841**	.720**	1

**. Correlation is significant at the 0.01 level (2-tailed).

The data reported is informed by the following scoring information: The ideal *perfect* score on the SEHS-HE is 216 based on the Likert scoring, and the ideal *perfect* score on the ROPELOC is 308, based on the Likert categories of the instrument. Of the responding graduates, forty percent (40%) of the students scored below average on the SEHS-HE and thirty-five percent (35%) scored below average on the ROPELOC measure.

The following table (See Table 4.8) represents all nineteen program scores, with mean scores of the responding graduates (n=45) on the respective instruments. It is important to understand that the total number of enrolled students within each program is omitted, and the representation of respondent scores here does not represent the scores of the entire population of the program, only the scores of the respondents within the programs. Additionally, this population scored, on average, at least 35 points less than ideal scores, on both instruments. Results are explored in greater depth below.

Table 4.8: *Data by Program and Mean*

Program	Number (N=)	ROPELOC Mean (268.93) (SD= 29.804)	Points from ideal ROPELOC Likert score of 308	SEHS-HE Mean (177.64) (SD=19.7)	Points from ideal SEHS-HE Likert score of 216	GPA Program Mean
Accounting	4	288	-20	176	-40	3.79
Applied Electronics & Computer Technology	1	260	-48	169	-47	3.71
Business Marketing	2	270	-38	187	-29	3.47
Computer Systems Integration	1	276	-32	187	-29	3.76
Culinary Arts	2	275	-33	211	-5	2.36
Early Childhood Education	2	287	-21	180	-36	3.69
Electrical Technology	1	288	-20	166	-50	3.93
Energy Services Technology	1	286	-22	188	-28	3.86
General Sciences	2	260	-48	158	-58	3.07
Health information Management	5	229	-79	163	-53	3.36
Liberal Studies	3	295	-13	193	-23	3.79
Medical Assisting	1	284	-24	173	-43	3.75
Mental Health	2	281	-27	183	-33	3.47
Nursing	8	264	-44	177	-39	3.30
Occupational Therapy	2	281	-27	190	-26	3.25
Physical Therapy Assistant	4	254	-54	172	-44	3.36
Precision Machine Technology	1	275	-33	185	-31	3.66
Radiological Technology	1	243	-65	151	-65	3.97
Welding	2	279	-29	169	-47	3.23
19 Different Programs	Total: N=45 Female (N=37) 82% Male (N=8) 18%	Highest Program Mean (295): Liberal Studies Lowest Program Mean (229): Health Information Management	Mean Program distance from ideal ROPELOC score: -35.63	Highest Program Mean (211) Culinary Arts Lowest Program Mean (151) Radiological Technology	Mean Program distance from ideal SEHS-HE score: -38.21	

Question Two

The second research question focused on the relationship amongst these non-cognitive measures and graduating students' GPA, and corresponded with the first hypothesis of the study. The Cumulative Grade Point Average of the responding graduates at this institution ranged from a low of 2.36 to a high of 4.0. The mean GPA was 3.44 with a standard deviation of .447, demonstrating little variability (See Table 4.9).

Table 4.9: *GPA and Age*

	N	Minimum	Maximum	Mean	Std. Deviation
GPA	45	2.36	4.00	3.4418	.44711
AGE	45	19	65	37.07	12.451

Hypothesis 1: Correlation between SEHS-HE and GPA

The hypothesis examining the SEHS-HE instruments' correlation to GPA measures is:

Hypothesis$_1$: Covitality composite score will positively correlate to GPA.

Null Hypothesis$_0$: There will be no relationship between Covitality and GPA.
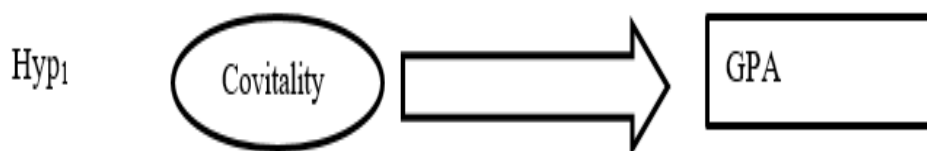
Figure 4.3: Hypothesis 1

Hypothesis1 examines the association between Covitality and GPA. Using the Pearson's correlation coefficient, SEHS-HE covitality scores do not positively correlate to GPA (See Table 4.10). The Null Hypothesis is accepted: There is no statistical relationship between Covitality

and GPA. This result suggests that non-cognitive skills represented by the SEHS-HE measure (BiS, BiO, Engaged Living and Emotional Competence) are not reflected in the cognitive success measure of GPA. Though respondents demonstrated adequate *cognitive* capacity through persistence, completion, and performance as measured by GPA, this preliminary study and analysis suggests that the non-cognitive skills present in the respondents are inadequate for workforce success.

Table 4.10: *Correlation between GPA and SEHS-HE*

SEHS-HE Correlation to GPA		GPA
GPA	Pearson Correlation	1
Belief in Self	Pearson Correlation	.118
Belief in Others	Pearson Correlation	-.012
Emotional Competence	Pearson Correlation	.211
Engaged Living	Pearson Correlation	.066
Covitality Composite	Pearson Correlation	.107

GPA is the primary cognitive academic success measure most widely used in education. GPA is an important cognitive measurement of the learning and mastery of the curricular content. It is an appropriate tool for hard skill, content skill, and cognitive skill assessment. However, this preliminary research suggests that GPA does not represent any of the non-cognitive skills identified and measured by the SEHS-HE. SEHS-HE does not correlate to GPA.

Hypothesis 2: Correlation between ROPELOC and GPA

Hypothesis$_2$: ROPELOC composite score will positively correlate to GPA.

Null Hypthesis$_0$: There will be no relationship between ROPELOC composite score and GPA.
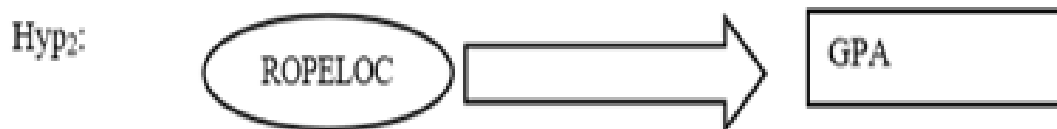
Figure 4.4: Hypothesis 2

Hypothesis2 correlations reflect that the ROPELOC composite score does, in fact, positively correlate to GPA, with a +.298 positive correlation using a two-tailed test for significance, resulting in a p-value reflecting <0.05. The p-value was 0.46, reflecting statistical significance (See Table 4.11). Though a +.298 correlation is a weak correlation (< .50 correlation) it is not spurious. In fact, using Cohen's (1988) psychological research guidelines interpreting effect size, a correlation coefficient of .10 is thought to represent a small association; a correlation coefficient of .30 is a moderate association, and a correlation coefficient of .50 or greater represents a strong association within the social sciences. With a positive correlation of +.298, this research revealed a correlation that is close to moderate, providing an opening for examining these non-cognitive variables further. Hypothesis2 is accepted: there is a positive correlation between the ROPELOC composite score and GPA.

Table 4.11: *Correlation between GPA and ROPELOC Composite*

Correlation of ROPELOC composite with GPA		GPA
GPA	Pearson Correlation	1
ROPELOC Composite	Pearson Correlation	.298*

Note. * Correlation significant at 0.05 level (2-tailed).

Further analysis reveals that specific components of the ROPELOC are more strongly correlated to GPA than others. As a matter of fact, only four of the 14 non-cognitive strengths (28% of the ROPELOC measured skills) correlate to student GPA. These four measures are: Active Involvement (Overall Effectiveness with a correlation of +.299), Social Abilities (Cooperative Teamwork with a correlation of +.409), Personal Beliefs and Abilities (Self-Efficacy with a correlation of +.382) and Organizational skills (Time Efficiency with a correlation of +.361). Two of these measures have a p-value of very strong statistical significance (p=<.01): Cooperative Teamwork and Self-Efficacy. That is, GPA captures one skill related to Social Abilities and one skill related to Personal Abilities and Beliefs with strong significance. It also correlates with some significance (p=<.05) to Time Efficiency, a skill found in the 21st century workforce strengths related to Organizational Skills, and to the non-cognitive ROPELOC belief of Overall Effectiveness. The component correlates are as follows (See Table 4.12).

Table 4.12: *Correlation between GPA and ROPELOC Components*

		GPA	ROPELOC Composite
GPA	Pearson Correlation	1	.298[*]
ROPELOC Composite	Pearson Correlation	.298[*]	1
Personal Beliefs	Pearson Correlation	.262	.906[**]
Social Abilities	Pearson Correlation	.317[*]	.823[**]
Organizational Skills	Pearson Correlation	.305[*]	.917[**]
Active Involvement	Pearson Correlation	.221	.894[**]

Note: * Correlation significant at the 0.05 level. ** Correlation significant at the 0.01 level.

This study used two instruments measuring a total of 26 non-cognitive skills under eight higher order 21st century workforce constructs, and of all of these, four individual non-cognitive skills were statistically significant to the cognitive measure of GPA. That is, 15% of the total

number of non-cognitive skills assessed were found to correlate to GPA. This preliminary data

suggests that relying on GPA as the primary measure for success does not appropriately

represent the non-cognitive skills required in the workforce, but is useful when considering the

rubrics and scaffolding related to cognitive assessment on which GPA is built.

Question Three

The final Research Question in this dissertation considers the third hypothesis (See

Figure 19), and asks what patterns emerge when inter-instrument comparisons are made.

Hypothesis 3: Inter-instrument Correlations

Hypothesis$_3$: Composite Covitality score will positively correlate to Composite

ROPELOC score.

Null Hypothesis$_0$: There will be no relationship between composite scores.

Hyp$_3$: Covitality → ROPELOC

Figure 4.5: Hypothesis 3

This research reveals a significant association between the ROPELOC composite and the

SEHS-HE (covitality) composite scores. In fact, there is a positive correlation of +.709 with a p-

value of < 0.05, indicating statistical significance. Hypothesis3 is accepted, and the null

hypothesis is rejected. This data demonstrates that non-cognitive skills do overlap, are identifiable, and can be measured using these instruments; however, it also demonstrates that many non-cognitive skills required for workforce readiness are not associated with GPA (See Table 4.13).

Table 4.13: *Correlation between SEHS-HE and ROPELOC and GPA*

Correlations				
		Covitality Composite	ROPELOC Composite	GPA
Covitality Composite	Pearson Correlation	1	.709[**]	.107
ROPELOC Composite	Pearson Correlation	.709[**]	1	.298[*]
GPA	Pearson Correlation	.107	.298[*]	1

Note. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Further analysis of the inter-instrument correlations reveals that the component parts of the Covitality instrument (SEHS-HE) correlate significantly to the ROPELOC composite and the Covitality composite (See Table 4.14), with the highest correlations between Engaged Living and the Covitality composite (+.879), Belief-in-Others and the Covitality Composite (+.783), followed by Belief-in-Self and the Covitality composite (+.753). Belief-in-Self, also, positively correlates with the ROPELOC composite (+.697). The data reveals that strong correlations exist between and among each of the domain components on these instruments.

Table 4.14: *Correlations between SEHS-HE Components and ROPELOC Components*

		ROPELOC Composite	Covitality Composite
ROPELOC Composite	Pearson Correlation	1	.709[**]

Covitality Composite	Pearson Correlation	.709**	1
Belief in Self	Pearson Correlation	.697**	.753**
Belief in Others	Pearson Correlation	.429**	.783**
Emotional Competence	Pearson Correlation	.566**	.766**
Engaged Living	Pearson Correlation	.590**	.879**
Personal Beliefs	Pearson Correlation	.906**	.729**
Social Abilities	Pearson Correlation	.823**	.551**
Organizational Skills	Pearson Correlation	.917**	.594**
Active Involvement	Pearson Correlation	.894**	.710**

Note: ** Correlation is significant at 0.01 level. * Correlation is significant at the 0.05 level.

Seven components of the ROPELOC correspond significantly with all four components of the SEHS-HE (covitality) measure: Active Involvement, Leadership Ability, Open Thinking, Self-Confidence, Social Effectiveness, Coping with Change, and Overall Effectiveness. These skills strongly correlate with the SEHS-HE Belief-in-Self, Belief-in-Others, Emotional Competence, and Engaged Living non-cognitive matrices. All four parts of Covitality, measured by the SEHS-HE, positively correlated to the ROPELOC's composite measure of non-cognitive strengths. Additionally, the Covitality composite positively correlated with twelve of the fourteen individual components of ROPELOC: Active Involvement (AI) +.600, Leadership Ability (LA) +.549, Open Thinking (OT) +.552, Quality Seeking (QS) +.440, Self-Confidence (SC) +.732, Self-Efficacy (SF) +.584, Social Effectiveness (SE) +.599, Stress Management (SM) +.546, Time Efficiency (TE) +.439, Coping with Change (CH) +.571, Overall Effectiveness (OE) +.648, and Internal Locus of Control (IL) +.320. The high correlations between and among these non-cognitive constructs support the idea that they are reciprocal, found in combination, and compounding in their impact on one another. More importantly, it signifies that these measures are identifiable, quantifiable, and can be assessed.

Summary

In the 21st century, non-cognitive skills and workplace readiness skills significantly overlap. Examining non-cognitive outcomes in education supports a more integrated definition of success within the 21st century. These skills can be hard to quantify; but, Positive psychology and experiential learning researchers have developed non-cognitive instruments to assess these strengths. The inter-instrument correlations between these two instruments suggest that these non-cognitive skills are both identifiable and measurable. This study used statistical analysis to determine the relationship of these non-cognitive scores, using these instruments, to students' Grade Point Average (GPA). Measuring these traits is an important quantitative first step to discovering whether the experiences at this community college result in these non-cognitive schemas within students' self-perception of skills sets.

The variance in these non-cognitive scores, along with the lack of association with GPA for the majorirty of the variables measured reflects that despite the importance of non-cognitive skills to both academic and professional success, GPA does not adequately associate with non-cognitive measures, and does not correlate to 85% of these non-cognitive strengths. More importantly, it reveals that GPA does not substantively reflect many non-cognitive skills (only four of 26) which are required for workforce success. GPA captured very few components related to Personal Abilities and Beliefs, Social Abilities, Active Involvement, or Organizational skills; and, did not adequately demonstrate any Covital non-cognitive skills related to Belief-in-Self, Belief-in-Others, Emotional Competence, or Engaged Living. If GPA is representative of the primary academic success outcome, it seems only to represent cognitive success and four non-cognitive components, which is not representative of non-cognitive skills related to workforce readiness.

The preliminary data revealed a strong inter-instrument correlation (+.709) with a p-value p=<.01. A positive correlation between GPA measure and the non-cognitive, 21st century work force skills, measure (measured by the composite score of ROPELOC instrument) was found (+.298), and possessed a p=<.05 or better. No relationship between GPA and the SEHS-HE non-cognitive instrument was found. Though GPA correlates with Time-Efficiency, Self-Efficacy, Cooperative Teamwork, and Overall-Effectiveness scores within the ROPELOC, and three of these ROPELOC components (all but Cooperative Teamwork) correlate to Belief-in-Self, Belief-in-Others, Emotional Competence, and Engaged Living (from the SEHS-HE), it is clear that the cognitive measure of GPA is not an inclusive success measure, leaving non-cognitive skills inadequately assessed.

Additionally, these initial findings suggest that at least average (for this population) non-cognitive performance scores were achieved in approximately 60-65% of the population, though this is contextualized by the fact that mean scores from this population compared to the instrument ideal scores revealed an average of more than a 35 point gap in self-perceptions between ideal and revealed scores. This signifies that all respondents and programs demonstrated a performance score of 65% on a scale of 100, a D+ by this institution's own grading scale. Additionally, large groupings of graduating students (35% on the ROPELOC and 40% on the SEHS-HE) self-reported below average non-cognitive skills despite graduating as workforce ready. This data suggests that establishing additional non-cognitive teaching, and assessment, would strengthen workforce readiness skills for this demographic.

In analyzing the data gathered from the 45 responding graduates in a rural Maine community college, it is clear that non-cognitive skills are not adequately represented by GPA, and the frequency of graduates entering the workforce without attendant non-cognitive skills

(40% of students had below average for this population scores on the SEHS-HE and 35% of the responding students scored below average for this population on the ROPELOC) is not representative of the college mission to provide workforce readiness, when it comes to non-cognitive skills. The need for a measurement tool that evaluates non-cognitive development in higher education, and that identifies and assesses for these strengths, is apparent. These non-cognitive higher order constructs have been found to be correlated to workplace success, academic success, well-being measures, and as protective factors against mental health issues (Furlong et al., 2014; Furlong, Gilman & Huebner, 2014; Renshaw et al., 2014). This supports their importance to transformational educational reform and curriculum design. Chapter Five addresses some curricular and pedagogical possibilities informed by this data and recommends responses necessary for such reform.

CHAPTER 5

CONCLUSION

This study explored the possibility for valuing and assessing a strength-based perspective in higher education, using an assessment of non-cognitive skills in conjunction with the primary GPA measure of academic success. A Positive psychology framework was introduced and elaborated upon in relation to the dual-factor model, which considers strengths and deficits on two separate continua, and seeks to enhance performance through a focus on the strengths schemas resulting from developmental and learning experiences. Considering these non-cognitive strengths and how they cluster in combination with one another is called Covitality. Some fields call these combinations of non-cognitive strengths: psychological capital, ethos, or habitus. The greater the clustering of non-cognitive strengths in combination, the more dynamic a person's personal and professional capacity. Covital characteristics of successful academic outcomes, and the constructivist model of meaning and schema making within this Positive psychology orientation, was used to evaluate the formation of these positive traits.

The overall design of this project took a quantitative approach, using formal, objective, systematic data derived from two non-cognitive instruments, the SEHS-HE and the ROPELOC, along with an analysis of student GPA. This researcher proposed that higher non-cognitive scores on these instruments would correlate to higher academic performance, additionally, that inter-instrument scoring patterns would emerge. This research approach fit a descriptive correlational design model, where the study described the current state of the non-cognitive schemas found in this community college setting. Using this type of correlational design allowed this research to explore the relationships between and among the variables using statistical analysis.

Data scored from the SEHS-HE and ROPELOC identified non-cognitive schemas required in the 21st century workforce, in the form of specific psycho-social-emotional (non-cognitive) strengths. When considered together, and quantitatively measured, this strengths-based research revealed students' non-cognitive schemas related to certain Covital strengths and values, and potential gaps in the integration of these key Covital skills within GPA as a measurement of preparation for workforce success in the 21st century. SPSS was used to run descriptive and inferential analytics, detailed in Chapter Four. The goal of this study was to survey the graduating class to evaluate non-cognitive self-schemas present, as represented by the instrumentation, and to suggest correlation with the standard measure of academic achievement, GPA, to assess for workforce readiness.

Both of these non-cognitive strength measures support a constructivist view which proposes that interactions with self and others create conditions that foster the development of non-cognitive schemas (Furlong, Gilman, Huebner, 2014; Jones, You, & Furlong, 2013; You, Dowdy, Furlong, Renshaw, Smith & O'Malley, 2013). As in cognitive schema construction, these non-cognitive schemas grow and alter with experience and learning. Non-cognitive schemas represent underlying beliefs and attitudes related to psychological strengths and assets, also called psychological capital, and represent components of habitus and ethos (Jung & Yoon, 2015; Silva, 2016; Singhal & Rastogi, 2018). Given these findings, this researcher argues that effective transformational educational efforts lie in the need to teach and assess for these non-cognitive skills.

This study's research questions explored whether there was a relationship between GPA and the SEHS-HE and the ROPELOC scores. The study discovered a relationship between the ROPELOC measures and the SEHS-HE measure, revealing that the instruments significantly

correlate to one another (+.709). However, the SEHS-HE score with its psychometrically correlated relationship to well-being and professional success was not associated with GPA, at all; while the ROPELOC was positively correlated with GPA (+.298), specific to only four component strengths embedded within the composite construct.

This gap between the standard cognitive measure of GPA and non-cognitive skills required as part of workforce readiness is represented most profoundly by the inter-instrument correlations found within this research (+.709), and is remarkable, because these non-cognitive strengths, measured in combination with socio-emotional instruments, are pivotal indicators of professional success; and they support schemas that are considered as psychological capital, across domains (home, school, work, play) (Peterson, Park & Sweeny, 2008).

Finding the inter-instrument correlation within this study demonstrates that the non-cognitive strengths evaluated can be identified and measured, consistently, using either instrument. Despite available measures for non-cognitive skills, these are not explicitly evaluated as separate from GPA. Identifying and measuring these non-cognitive skills through this conceptual framework bridges a gap in research left by a predominately cognitive focus in education. Cognitive focus allows for measurement of traditional academic learning and identification of remedial needs. However, these preliminary findings suggest that apurely cognitive approach does not explicity assess for non-cognitive strengths, strengths required for workforce and interpersonal success. Though 15% of the non-cognitive strengths assessed did correlate with cumulative GPA, that leaves 85% not accounted for within this cognitive measure.

Educators must consider these non-cognitive schemas related to successful performance in the 21st century; and, in consideration of them, must assess for and measure them. Without understanding the schemas formed, positive institutions cannot impact experiences or traits in a

manner that could transform educational practice. Based on these preliminary findings, an alternative measurement instrument may be needed regarding the teaching, learning, and assessment of non-cognitive 21st century workforce skills within this community college which professes work-force readiness programming.

Interpretation of Findings

Psychotherapeutic counselors have, as standard practice, evaluated dynamic systems in which individuals are embedded, in an effort to take a holistic and integrative view of well-being and success. This study applied this counseling practice to education, by evaluating social emotional non-cognitive skills through the analysis of strengths measure scores of graduates from a rural Maine community college.

The findings demonstrated that non-cognitive strengths could, in fact, be measured, as demonstrated by the high statistical inter-instrument correlation. Four of the 26 non-cognitive strengths assessed correlated to GPA. However, this preliminary study, also, reveals that GPA is not an appropriate measure of these non-cognitive workforce readiness skills, and an additional assessment measure could be implemented in community colleges if workforce readiness skills are part of the values, mission, goals and stated purpose of the educational institutions. The addition of non-cognitive measurement seems an important first step in any transformative efforts in higher education. Emphasizing non-cognitive skills as being as important as cognitive skills, and addressing non-cognitive assessment similar to cognitive assessment in higher education as a necessary step toward creating transformative reform.

Nunnally (1978) suggested that "in a very general sense, a measuring instrument is valid if it does what it is supposed to do" (p. 86). Grade Point Average (GPA) is not supposed to assess for non-cognitive skills. If non-cognitive capacity is not represented by GPA, how can a

valid measuring instrument better represent the teaching and learning expected in higher education regarding these workforce readiness skills? A non-cognitive skills assessment process should be considered as part of a valid assessment shift in community colleges.

It is important to examine the academic success measure analyzed within this research, and held as the primary indicator of academic success in higher education: cumulative grade point average (GPA). One use of GPA is to predict successive academic performance (Robbins et al., 2004). This assumes that the grades that a student receives captures cognitive constructs, to some degree. GPA is therefore combined into a scale, and held as a valid measure of learning. Course grades reflect academic performances in different class or content areas, at different points in time and in different learning contexts, and these course grades are added to a cumulative GPA calculation. The consensus held by researchers and educators, alike, is that GPA adequately measures cognitive skills learned within the educational experience. However, given the changes in education, and the changing demands of the workplace, it is essential to consider how these changes may require both cognitive and non-cognitive learning, which might impact the educational needs and requirements of community college students. This study related non-cognitive skills development to GPA to determine whether this measure reflects both cognitive and non-cognitive learning. The data, however, did not significantly support this relationship between cognitive and non-cognitive skills.

This research highlights an important finding that GPA is a cognitive measure that may incorporate some non-cognitive aspects; but this finding, also, speaks to the necessity of incorporating other measurable non-cognitive skills into the curriculum, assignments, and educational experience in order to address the workplace demand for these non-cognitive skills. Future research may seek to define how more of these non-cognitive skills can be captured

within the cognitive measure of GPA in order to target the teaching of these non-cognitive skills in workforce readiness institutions, while simultaneously assessing for these skills, as separate from GPA. This transforms the emphasis to workforce readiness needs and assessment in order to ensure graduates possess these important non-cognitive skills as they enter the workforce.

Times have changed, changing the needs of the global workforce and requiring an emphasis on non-cognitive skills; educational institutions must adapt to these learning expectations. It is clear that cognitive skill assessment is not the only, nor the most important, measure related to academic success, especially in relation to the 21st century workforce. Twenty-first century skills, similar to non-cognitive skills, have a broad and imprecise definition. These skills are distinguished from former educational and workforce skills because of the changes in technology and culture, "leading to changing demands in the workplace" (Kyllonen, 2012, p. 4). These changes come in the form of the non-cognitive skills required, but GPA was not designed to assess, nor have institutions adapted to measures that assess, 85% of the non-cognitive skills examined. The re-evaluation of the significance of GPA as the primary measure of academic success is a necessary focus for a transformational paradigm shift that values these non-cognitive skills.

This study examined the self-assessment scores on two non-cognitive skill measures, correlated these composite scores with GPA, and further analyzed component and composite non-cognitive scores. Chapter Four depicted the data patterns that emerged using these instruments, finding that there are few representative non-cognitive components related to GPA and that 35-40% of the graduating respondents are leaving the institution with below average non-cognitive schemas. Additionally, students from all programs scored more than 35 points less than ideal performance on these non-cognitive instruments.

Research Questions and the Data

The first research question within this study focused on identifying the student non-cognitive scores through self-assessment instruments and reporting these findings. These scores represent the non-cognitive schemas present in the respondents. The question revealed data that demonstrated a need to target non-cognitive skills in the student population, and segues to the need to define ancillary non-cognitive measures of success. The statistics are in keeping with the psychometric testing of the respective scales in validation studies, and support that these non-cognitive strengths are, in fact, appropriate success measures in higher education.

The second research question sought to understand the relationship among the non-cognitive measures and GPA. As presented in Chapter Four, the hypotheses examined resulted in finding that the SEHS-HE covitality score has no relationship to GPA. Additionally, this research revealed that there is a positive correlation of 21st century workforce skills, as measured by the ROPELOC, to GPA. (+.298). This is an interesting finding given the comparison correlation scores of the two instruments, forcing the researcher to examine what specific components of the ROPELOC correspond to GPA. Only four components of the ROPELOC were captured within the GPA measure, revealing that the GPA measure is an inadequate, single, measure for defining success in higher education when evaluating the needs of the 21st century workforce.

The third research question explored in this study evaluated the relationship of the Covitality score, as measured by the SEHS-HE and 21st century workforce skills, as measured by the ROPELOC (+.709). This significantly strong correlation allowed for closer analysis of the component parts of these scales. This finding reveals that these non-cognitive traits can be identified and measured, creating an opportunity for redefining success assessment in higher

education. Education reform must consider non-cognitive strength assessment if transformational change can occur.

In summary, the inter-instrument findings are as follows: Belief in Self (BiS) [Self-Efficacy, Persistence, and Self-Awareness] positively correlated to the ROPELOC composite (+.697). Belief in Others (BiO) [Family, Institution, and Peer Support] is positively correlated to the ROPELOC composite (+.429). Emotional Competence (EC) [Cognitive Reappraisal, Empathy, and Self-Regulation] positively correlates to the ROPELOC composite (+.566) and Engaged Living (EL) [Gratitude, Zest, and Optimism] positively correlates to the ROPELOC composite (+.590). This demonstrates that all four parts of covitality measured in the SEHS-HE positively correlate to the ROPELOC's composite measure of non-cognitive 21st century workforce strengths. Clearly, these strengths represent appropriate success measures that educators can assess. Given these findings, it is evident that there was high inter-instrument reliability in identifying and measuring non-cognitive factors, and that GPA does not adequately represent the majority of the non-cognitive skills required for the 21st century workforce. Defining appropriate success measures, inclusive of whole person assessments in education, fulfills this portion of the transformative call to action.

This study found that only 15% of the non-cognitive skills examined within this study are, in fact, captured by the cognitive GPA measure. The non-cognitive strengths correlating to GPA are: Cooperative Teamwork (+.409), Self-Efficacy (+.382), Time Efficiency (.361) and the non-cognitive measure of Overall Effectiveness (+.299). While this is an important finding, it reflects that too few non-cognitive skills required for workforce success are represented by the GPA measure, and a more appropriate non-cognitive measure should accompany the typical cognitive measure of GPA.

The four non-cognitive strengths correlating to GPA are the only non-cognitive measures out of the 26 skills surveyed to reveal statistical significance to the GPA cognitive measure. The four constructs that do correlate to GPA are related to typical curricular assignments and content based assessment. For example, the timeliness of the assignment may be related to time-efficiency, and many group related projects assigned may account for cooperative teamwork skills. Assignments may be framed with rubrics, so the cognitive milestones are assessed. These types of assessments, too, could be used for assessing the non-cognitive milestones.

Based on these findings, curriculum design as it stands, can be considered as supporting only these four non-cognitive strengths. How can curriculum be organized to explicitly consider and assess the remaining non-cognitive skills? Reforming curriculum would be a worthwhile step toward transformational change. Though the study was small, included a rural population of graduating students, and had several limitations, the preliminary findings suggest specific reforms need to combine cognitive and non-cognitive teaching and learning within community college practices. This data supports additional non-cognitive schema cultivation of strengths in higher education, to include non-cognitive strengths identification and measurement, in order to ensure the integrative socio-emotional learning necessary for the 21st century workforce.

Non-cognitive skills facilitate positive development across biopsychosocial domains (Caruso, Salovey, Brackett, & Mayer, 2015; Diener, & Tay, 2017; Dutton & Ragins, 2017; Robertson, Cooper, Sarkar, & Curran, 2015) highlighting the transformational importance of the educational experience as it applies to the professional development of the field. It is the position of this researcher that educators can explicitly and proactively influence interactions to increase these positive non-cognitive schemas. This assessment supplement, specifically pertains to the evaluation of the skills required in the 21st century workforce in community colleges that are

work-force readiness institutions. In other words, the current community college primary academic assessment tool, GPA, is not associated with the majority of these non-cognitive skills. Only 15% of the 26 strengths identified are represented by GPA, despite their inter-instrument identifiability and reliability. Research reveals, however, that learning and development holds these features as important components of successful development. The mission at this College explicates that the quality of learning within this educational experience will prepare students for the work force. In the 21st century, this workforce readiness emphasis alters academic expectations to simultaneously focus on content skills (cognitive) and applied skills (non-cognitive). If the College mission is preparing adults for workplace readiness, what measures are used to ensure that the non-cognitive skills required in the workforce are being integrated into the students' learning experience? This study identified those non-cognitive skills in the responding graduating class of this community college and found little correlation with GPA. Assessing these values and strengths should occur as a standard measure of educational efficacy in order to better embody the college's mission.

Implications

Transformative higher education and workplace readiness literature asks educators to consider curricular changes and transformative policies (Davidson et al., 2012; IFTF, 2011; NWoW, 2014). The research findings revealed here pose three significant areas to explore:

1) The cognitive measure of GPA does not adequately capture a majority of non-cognitive skills present in graduating students at this community college.

2) Non-cognitive skills are required for workforce success, but no measure of these skills is in place at this community college to identify non-cognitive capacity.

3) The community college mission statement is built around workforce readiness and training, but there are no measures to suggest graduates are non-cognitively work-force ready.

To frame the conclusion of this dissertation, this research uses three recommendations for change, posed by the US Department of Education (MCCS, 2007) to organize a framework for transformational change: 1) define appropriate measures of success, 2) collect more comprehensive data, and 3) test and refine strategies that improve student outcomes (MCCS, 2007, p. 47). Each of these topics will be explored and related to the data in an effort to align outcomes and learning, education to workforce readiness, and to support the development of the new American College (Boyer, 1994), presenting implications and application of this data regarding curricular outcome assessments within the educational setting, especially in light of these three foundational aspects proposed by the US Department of Education (MCCS, 2007). Pedagogical vocabulary which may support more appropriate non-cognitive schema construction is included, as well as advocacy for future research contextualized by these three recommendations.

This study's findings reveal that non-cognitive skills are not fully represented in GPA, and though 4 of the 26 non-cognitive strengths correlate to GPA, more than 35% of the graduating students scored below average on the ROPELOC assessment and 40% scored below average for this population on the SEHS-HE, representing self-perceptions absent of these workforce ready, non-cognitive strengths. Additionally, all respondents scored at least 35 points lower than the ideal score on both non-cognitive measures. This finding leads to the first step of transformation: Definition and identification of success measures as part of assessment of these 21st century, non-cognitive, socio-emotional skills. Without an appropriate non-cognitive

success measure in place, it is difficult to assess whether the educational experience meets the non-cognitive needs of these students.

These preliminary findings bring socio-emotional theories related to learning and psychological strengths from the counseling room into the classroom, where students are learning to perform in the workforce. Using success outcomes that capture cognitive skills based on academic performance, via Grade Point Average (GPA), supports the college mission of presenting thought and theory, related to the new American College; but these findings suggest that it does not connect the cognitive GPA measure with the non-cognitive action or practice necessary for success in the 21st century, with the exception of four non-cognitive skills which correlate to GPA and inevitably are included in cognitive rubrics and assessments.

Ensuring that students are graduating with non-cognitive skills required for success in the workforce embodies the purpose of the *new American College* by relating theory to practice, and content to application, exemplifying the purpose of higher education. While colleges have been successful in the development of rubrics and other measures to address the assessment of cognitive skills, the assessment of non-cognitive skills does not seem to garner the same attention. Colleges that aspire to prepare students for the demands of the 21st century workforce may need to build upon current curriculum development and assessment practices in order to assure that their graduates experience the opportunity to learn about, develop, and demonstrate non-cognitive skills.

Recommendations for Action

This study examines non-cognitive skills in combination, and imagines how these skills can be incorporated into the learning experiences of higher education. If the community college

in this study purports to provide workforce readiness training, as their mission holds, then non-cognitive instruction and assessment should accompany their content-based curriculum.

The Maine Community College System (MCCS) researched transformative action required for successful education reform in the 21st century. Their report cited the US Department of Education's research on the Future of Higher Education (2006). This report emphasized four requirements for transformation: 1) higher education must be more efficient and productive; 2) higher education must become more accountable to the constituents involved; 3) higher education should provide more useful information to its consumers; and 4) higher education must manage itself using better data (US Department of Education Secretary's Commission of the Future of Higher Education, 2006). From these targeted areas, MCCS issued the following charge to educators: define appropriate measures of success, collect more comprehensive data, and test and refine strategies that improve student outcomes (MCCS, 2007, p. 47). In lieu of these findings, this researcher will frame the data from this study within this call to action.

The primary goal of the Maine Community College System (MCCS) is to create an "educated, skilled and adaptable labor force that is responsive to the changing needs of Maine's economy" (MCSS Program Evaluation Report, 2017, p. 2). How is the college assessing the interpersonal and intrapersonal strengths that comprise non-cognitive success? GPA is not fully capturing these constructs, so educators are not connecting thought to action, and theory to practice, as the *new American College* (Boyer, 1994) asks them to do. How can educators be more efficient and productive, demonstrating accountability to its constituents, while providing and using better data? How can non-cognitive skills' emphasis and development be a part of the community college education experience?

The New World of Work (NWoW, 2014) highlights non-cognitive and socio-emotional strengths, recognizing that they are not traditionally "taught or assessed through education." This organization recommends that non-cognitive skills "should be added to curricular requirements to fully prepare the future workforce" (Schulz & Gills, 2014, p. 13.) This chapter uses the Department of Education's call for transformation in order to explore how these skills may be "taught or assessed" in higher education and within curricular requirements based on this preliminary study. The Department of Education Secretary's Commission of the Future of Higher Education (MCCS, 2007) states, "defining appropriate measures of success, collecting more comprehensive data, and testing and refining strategies at improving student outcomes" (MCCS, 2007, p. 47) which is the call to action for transformative higher education. Each of these areas will be addressed given the data findings of this study. A transformative change can specifically include these features.

Define appropriate success measures

When framing education in a workforce readiness perspective, based on this research and literature review, combinations of non-cognitive skills and strengths are related to workforce success. With this understanding, defining appropriate success measures that also incorporate these aspects is essential. Additionally, because of such high inter-instrument correlation (+.709), it is clear that these traits are not only identifiable, but measurable, and reciprocally related to one another in the form of schemas. How are these non-cognitive strengths evaluated in higher education? This study revealed that only four of the 26 non-cognitive skills examined correlate to cumulative GPA. Instead of relying on cumulative GPA as the primary significant measure of academic success, non-cognitive success instruments must be established and applied in higher

education. Defining these non-cognitive measures would be part of more successful outcome assessment in relation to the needs of the 21st century.

The non-cognitive strengths required in the 21st century workforce, according to P21 (2006) are related to the following applied non-cognitive skills: critical thinking and problem-solving, communication, teamwork and collaboration, diversity, cognitive load and information organization, leadership, creativity and innovation, lifelong learning and self-direction, professionalism and work ethic, and emotional competency with social responsibility (P21, 2006). The Partnership for 21st century learning groups these non-cognitive 21st century workforce skills into Learning and Innovation skills (critical thinking and problem-solving, collaboration, communication, and creativity and innovation), Life and Career skills (flexibility and adaptability, initiative and self-direction), Social and Cross-cultural skills (productivity and accountability, and leadership and responsibility skills) and Information, Media and Technology skills (literacy and capacity in these specific applied areas). Additionally they emphasize *character qualities* (curiosity, persistence, adaptability, and social and self-awareness) along with *foundational literacies* (standard literacy and numeracy requirements often found in the three R's of public education: Reading, Writing, and Arithmetic) (P21, nd.). Defining these non-cognitive psychological assets as part of academic and educational success, is a first step in transformation.

Despite the established importance of these skills in higher education, these non-cognitive skills (with the exception of time efficiency, cooperative teamwork, self-efficacy, and belief in overall effectiveness) are not represented in the cognitive outcomes score of cumulative GPA, based on this preliminary non-cognitive skills assessment study. Finding ways to identify, measure and define these non-cognitive strengths as part of workforce readiness and as academic

success outcomes is a necessary part of defining more appropriate non-cognitive success measures. Accountability demands reveal that implicit teaching is not enough. Data collection and evidence based practices are required.

The Educational Testing Service (ETS) is responsible for some of the most popular standardized cognitive test measures (SAT, GRE, and the Praxis Series) (Kyllonen, 2005). ETS has been attempting to create a non-cognitive educational measure to assess for persistence, dependability, motivation, collaboration, and other inter-personal and intra-personal schemas. A barrier cited by ETS is that policy makers argue that non-cognitive qualities cannot be measured in reliable and valid ways. This preliminary research, however, demonstrates that non-cognitive scores on the inter-instrument correlations are related, reliable and measureable, making these measures both reliable and valid. Providing professional development and training regarding understanding these non-cognitive scales allows educators to more accurately understand the non-cognitive vocabulary and expectations, leading to more consistent evaluative methods.

Though ETS cites that the *fakeability* or *coachability* of non-cognitive assessments would render them worthless (Kyllonen, 2005), this argument is not one that should dissuade the definition of appropriate non-cognitive measures. Fake-resistant non-cognitive assessments are only an issue if these tools are used to base privileges or benefits to the respondents. An alternative to the 'fakeabilty' or social desirability related to self-assessments is other-based assessments. It would be helpful to curriculum development if self-assessment and teacher-assessment could be used in tandem. In fact, these can be viable alterations to practice if non-cognitive rubrics were used with assignments, in order to highlight, assess, and improve the students' non-cognitive schemas. In fact, as Positive psychology proponents support, the key

factors in non-cognitive assessment include understanding attitudes, learning skills, affective competencies, and students' educational experiences (Kyllonen, 2005).

Additionally, whole person assessments in education (Moore, 2015) focus on affective competencies (creativity, emotional intelligence, cognition style, metacognition and confidence), performance factors (domain proficiency, general proficiency, effort, motivation and engagement, discipline, professionalism, teamwork, leadership, management and organization skills), cognitive ability, basic personality factors (extroversion, emotional stability, agreeableness, conscientiousness, openness/intellect, and circadian type), learning skills (study habits, organization, time management, test anxiety, and stress and coping), attitudinal constructs (self-concept, self-efficacy, attribution tendencies, interests, social attitudes, values and beliefs, ethics, morality, intercultural sensitivity, adaptability and flexibility), and incorporates the standard outcomes measured by the education system (GPA, exams, ratings, attrition, time to degree, and productivity indicators) (Kyllonen, 2005). Using the foundational work from counseling's whole person assessment transferred to educators' understanding of these factors and can buoy the skills of students and teachers alike.

Cognitive and non-cognitive foci do not have to be mutually exclusive. When examining this whole system assessment, which includes both cognitive and non-cognitive skills assessment, how much are educators and educational policy makers doing to identify the non-cognitive components? Because non-cognitive assessments can improve admissions, placements, outcomes, institutional studies, and aid in diagnosis and treatment and prevention and intervention (Kyllonen, 2012), it is clear that transformational policy change that incorporates non-cognitive assessments is required in the 21st century education system. Additionally, it

answers the call to action posed by the US Department of Education in establishing well-defined, and integrative, success measures.

Collect More Comprehensive Data

The second MCCS (2007) requirement for transformative action in higher education is for institutions to collect more comprehensive data. Given the advancements in psycho-social research fields, especially in light of Positive psychology's emphasis on neuroscience and contemplative learning, ideas such as emotional control and self-regulation are highlighted among non-cognitive skills of interest to well-being measures, and personal and professional success outcomes. This integrative approach addresses strengths from a bio-psycho-social systems model, based on the experiential impact of development on self and others schema construction, and takes a learning theories perspective. It is a valuable method to bridge the gap in research from social science to education.

This approach can connect social-emotional skills from the field of social science, to educational settings where these strengths can be fostered, to the 21st workforce. As the 21st century workforce magnifies focus on applied skills in the form of these non-cognitive capacities, it's essential to evaluate these skills and strengths, especially in institutions that proclaim a commitment to workforce readiness programs. Defining these non-cognitive skills as appropriate success measures is only the first step; the next step is collecting non-cognitive data.

Non-cognitive skills reflect attitudes, behaviors, and schemas relevant to motivation, perseverance, and self-control (Gutman & Schoon, 2013). Academic literature may differentiate cognitive skills from non-cognitive skills by distinguishing cognitive capacities as 'hard skills' or content related capacities, such as literacy and numeracy; whereas, non-cognitive skills are thought of as applied character skills or soft-skills. Of import, research does not support a single

non-cognitive skill as predictive of long term success outcomes; rather, it tends to emphasize the clustering and inter-relatedness of non-cognitive skills as valuable. Interventions must be focused on the targeting and development of self-schemas, emphasizing these skills and strengths in combination with each other, experiences, and relationships. Validating the importance of self-perception and self-schemas regarding inter/intrapersonal expectations is a key finding in this research. These self-assessments are useful tools in reflecting these non-cognitive belief systems, and so should be used within higher education to collect more comprehensive data.

This study reveals that both higher order constructs and individual components are important levels of analysis. For example, non-cognitive constructs found within the academic performance literature highlights skills such as motivation, self-efficacy and performance mastery (Kyllonen, 2012, NWoW, 2014), but these skills are thought to be comprised of specific individual psycho-social strengths, found in clusters or combinations. For example, Belief in Self is comprised of self-efficacy, persistence, and self-awareness; while ROPELOC's Personal Abilities and Beliefs is comprised of self-confidence, self-efficacy, stress management, and open thinking. Each of these higher order constructs resonate with motivational and performance mastery skills when considering the component traits. Despite the importance of these non-cognitive strengths, specifically to workforce success and readiness, their placement in literature reviews relative to educational research has been decades old, and cursory, at best. This non-cognitive strengths data is not normatively collected in higher education programs.

This research demonstrates that the component pieces of higher order constructs related to non-cognitive skills may be an important area for exploration. If self-efficacy, persistence, and self-awareness comprise multiple higher order constructs, collecting the data on these individual component pieces of personal and professional success indicators is a pivotal practice in

workforce readiness institutions. This study's findings did, in fact, reflect more comprehensive

data, revealing the absence or presence, and the associations, of multiple non-cognitive skills

within the responding graduates' instrument scores.

Table 5.1: *Component Correlations of ROPELOC and SEHS-HE*

Belief-in-Self	Belief-in-Others	Emotional Competence	Engaged Living
Active Involvement .368*	Active Involvement 568**	Active Involvement .349*	Active Involvement .586**
Leadership Ability .490**	Leadership Ability .384**	Leadership Ability .407**	Leadership Ability .469**
Open Thinking .384**	Open Thinking .405**	Open Thinking .562**	Open Thinking .435**
Quality Seeking .409**	Self-Confidence .413**	Quality Seeking .500**	Quality Seeking .343*
Self-Confidence .771**	Overall Effectiveness .361*	Self-Confidence .525**	Self-Confidence .641**
Self-Efficacy .706**	Coping with Change .341*	Time Efficiency .400**	Time Efficiency .314*
Social Effectiveness .440**	Social Effectiveness .493**	Internal Locus of Control .353*	Overall Effectiveness .589**
Stress Management .634**		Overall Effectiveness .456**	Coping with Change .449**
Time Efficiency .623**		Coping with Change .436**	Stress Management .435**
Coping with Change .607**		Stress Management .428**	Self-Efficacy .453**
Overall Effectiveness .675**		Self-Efficacy .580**	Social Effectiveness .584**
Internal Locus of Control .450**		Social Effectiveness .370*	
External Locus of Control -.376*			

Note. * Correlation is significant at p=0.05 and ** Correlation is significant at p=0.01 and >.500

   Psychometrics and psycho-social-emotional constructs such as these can be included in

comprehensive data collection within higher education assessments. Belief in Self has six

ROPELOC components meeting both the strong correlation (>.500) and statistical significance

correlation criteria (p=<0.1): Self-Confidence, Self-Efficacy, Stress Management, Time

Efficiency, Coping with Change and Overall Effectiveness. Belief in Others has one ROPELOC

component meeting this significance criteria: Active Involvement. SEHS-HE's Emotional

Competence has four componential parts significantly related to the ROPELOC: Open Thinking,

Quality Seeking, Self-Confidence, and Self-Efficacy. Finally, Engaged Living shares four

components with the ROPELOC instrument measuring non-cognitive 21st century workforce

skills, and those are: Active Involvement, Self-Confidence, Overall Effectiveness, and Social

Effectiveness (See Table 5.1).

Self-Confidence appears three times in the inter-instrument correlation as a valuable

component and correlate in this study. Self-Efficacy, Active Involvement and Overall

Effectiveness re-emerge twice, each, as statistically significant variables. And, the following

variables appeared singly as individual correlates within the ROPELOC and the Covitality score,

representing individual strengths with both strong associations (>.500) and a significance value

of p=<0.01: Coping with Change, Open Thinking, Quality Seeking, Social Effectiveness, Stress

Management and Time Efficiency.

Establishing measures and identifying these strengths, along with pedagogical activities

that may enhance or improve the schemas related to these non-cognitive skills, could be an

important direction for future research. Assessing for and incorporating the explicit teaching of

these qualities would be a substantive transformation related to collecting important

comprehensive data for educational interventions leading to workforce readiness. Understanding

the overlapping and reciprocal relationship of these non-cognitive traits supports schemas

construction and learning, and must be further analyzed in order to support comprehensive data

collection.

Future research could examine use of these specific skills added to pedagogical

interventions to determine more effective use of this comprehensive non-cognitive data.

Noticeably, enumeration of non-cognitive 21st century workforce skills appears to be the most

significant of those analyzed based on the SEHS-HE and ROPELOC correlations: Coping with

Change, Open Thinking, Quality Seeking, Social Effectiveness, Stress Management and Time

Efficiency and the specific ROPELOC sections that correlate with cumulative GPA: Cooperative

Teamwork, Self-Efficacy, Time Efficiency, and Overall Effectiveness.

In order to better understand what collecting more comprehensive data may do for

educators, this researcher examines the questions asked in the correlated ROPELOC components

that consistently reappeared in the data. These questions directly oppose ETS's contention that

non-cognitive skills are not measurable or identifiable (Kyllonen, 2005); and, argue that

fakeability concerns are not relevant to curricular and pedagogical changes. Additionally, if

teacher report is included in the form of non-cognitive rubric assessment, the schemas related to

these non-cognitive strengths can be co-constructed through educational interventions and

teachings. Ultimately, the next logical step becomes using these guiding constructs to cultivate

and engineer learning that supports the schemas they are measuring.

The Likert scaled tests used in non-cognitive data collection can help educators

synthesize these constructs into successful learning of the schemas that are reflected within them,

allowing for comprehensive and shared vocabulary on which to base assessments.

Table 5.2: *Schema Construction Revealed by ROPELOC Likert Scale*

Self Confidence	"I am confident that I have the ability to succeed in anything I want to do."	"When I apply myself to something I am confident I will succeed"	"I am confident in my ability to be successful."
Self-Efficacy	"No matter what the situation is I can handle it."	"No matter what happens I can handle it."	"I can handle things no matter what happens."
Active Involvement	"I prefer to be actively involved in things."	"I like being active and energetic."	"I like to get into things and make action."
Overall Effectiveness	"My overall effectiveness in life is very high."	"Overall, in all things in life, I am effective."	"Overall, in my life I am a very effective person."
Coping with Change	"I cope well with changing situations."	"When things around me change I cope well."	"I cope well when things change."

Open Thinking	"I am open to different thinking if there is a better idea."	"I am open to new thoughts and ideas."	"I can adapt my thinking and ideas."
Quality Seeking	"In everything I do I try my best to get the details right."	"I try to get the best possible results when I do things."	"I try to get the very best results in everything I do."
Social Effectiveness	"I am effective in social situations."	"I am competent and effective in social situations."	"I communicate effectively in social situations."
Stress Management	"I am calm in stressful situations."	"I can stay calm and overcome anxiety in almost all situations."	"I am calm when things go wrong."
Time Efficiency	"I plan and use my time efficiently."	"I am efficient and do not waste time."	"I am efficient in the way I use my time."
Cooperative Teamwork	"I like cooperating in a team."	"I cooperate well when working in a team."	"I am good at cooperating with team members."

This table (See Table 5.2), for example, represents the schema construction that supports positive non-cognitive constructs listed in the left hand column of the chart. Better understanding of schema constructions related to these non-cognitive strengths can support building explicit learning environments that foster them. For example, an educator can create challenging learning situations that support a student's positive answers to "No matter what the situation is I can handle it," as is reflected in the Self-Efficacy category teaching and meta-teaching this non-cognitive strength.

This researcher believes one of the ways to use these schemas is to incorporate rubrics that assess for these skills throughout the learning experience. Using the same grading and assessment techniques related to cognitive schema construction (rubrics, learning outcomes, curriculum design) targeted by teaching and learning theories, educators can more explicitly implement and embrace teaching these non-cognitive schemas. Ultimately, non-cognitive strengths are learned in the same ways as cognitive skills are learned, so providing simultaneous developmental opportunities for these non-cognitive strengths within higher education would not be too great a shift from what already takes place in the classroom.

Understanding that both cognitive and non-cognitive learning is accessed cognitively shatters the false dichotomy proposed by the the terms used. It also allows consideration of these non-cognitive constructs through data collection, and assessment through rubrics and curriculum outcomes, just as cognitive constructs are considered. This can become a transformational practice in higher education, demonstrating the cognitive access points related to these non-cognitive skills, similar to the use of cognitive behavioral therapy within the counseling profession. Using cognitive inroads to non-cognitive learning frames self-schemas as attitudes and beliefs learned about self. Each are perceptions of an individual's own capacity to do or be something. Non-cognitive skills are learned schemas concerning both past and future experiences and beliefs. This highlights the importance of the learning experience in both cognitive and non-cognitive performance. These preliminary findings highlight that self-schemas are a function of experience and are developed through interactions and relationships, otherwise known as learning. Therefore, learning theories such as the use of scaffolding and pedagogical approaches such as collaborative learning may be appropriate reform strategies to enliven non-cognitive schema construction through cognitive avenues.

Gutman and Schoon (Education Endowment Foundation, 2013) summarized this schema construction through experience by describing: "pupils that believe in their ability are likely to improve their performance, and those that improve their performance are likely to have belief in their ability" (EEF, 2013, p. 10). Marsh & Craven (2006) argue that this belief mandates that academic self-concept and academic skills should be simultaneously targeted. Similarly, this researcher argues that self-efficacy and other non-cognitive skills should be targeted pedagogically and through assessment, simultaneously with academic and cognitive skills. This utilizes the Dweck growth mindset belief system appraised in this study's literature review. It is

important to conceptualize these attributes and improvements as malleable skills rather than fixed constructs or unchanging personality traits. Gutman and Schoon (EFF, 2013) explain that "believing one can meet the demands of a given task is a prerequisite to putting forth sustained effort" (p. 11). A teacher can model this belief.

This research supports collecting more comprehensive data, and incorporating a level of analysis that examines more closely the non-cognitive components that are, in fact, correlated to one another when examining higher order constructs of these two non-cognitive measures in relation to GPA. The correlation analysis conducted in this study supported two of the three hypotheses exploring the correlational relationships examined. As demonstrated in the review of questions composing these constructs (See Table 5.2) which comprise the schemas of the most statistically significant non-cognitive skills on the ROPELOC, there is evidence that learning impacts the schema construction regarding one's own skills and beliefs. How might this information be translated into action in the academic setting? To answer this question, it is important to examine cognitive schema construction and learning, which leads to the final recommendation from the US Department of Education: Testing and refining strategies for improving student outcomes.

Testing and refining strategies for improving student outcomes

The inter-connection of these skills, as explored within the literature review and data sections of this dissertation, implies that many of these non-cognitive skills are linked together, comprised of schemas, and are not often found as stand-alone constructs. Defining these skills as appropriate success measures, and collecting more comprehensive data by assessing for these skills, leads, finally, to cultivating meta-learning and schema building interventions regarding

these strengths. This final area regarding cultivation corresponds with the US Department of Education's request to test and refine strategies for improving student outcomes.

Findings related to learning and the brain are: content needs to make sense to the learners, it has to be relevant, emotions drive attention and memory, action is important in learning, multi-sensory experiences improve memory and application/practice, and relaxed attention optimizes learning. Additionally, teachers should build on the learner's existing beliefs and knowledge, positive emotions aid in thinking and remembering, learning happens both consciously and unconsciously, and deep learning includes memory and retrieval, analysis, critique, action, feedback, and refinement (MacFadden, 2013).

Psychotherapists take this information and implement it into their practices to aid in the transformation of the client's cognitive and non-cognitive schemas, empowering them as agents of their own change (MacFadden, 2016). Similarly, instructors in higher education could implement this information within the classroom to impact both cognitive and non-cognitive schemas. Defining non-cognitive strengths as success measures, collecting non-cognitive data, and targeting non-cognitive learning, just as educators target cognitive skills-building, utilizing the information related to positive emotions and learning, leads to testing and refining pedagogical and curricular strategies to meet the non-cognitive needs of students.

As Kyllonen (2005) found, outcomes traditionally measured by the educational system are: GPA, Exams, Ratings/Grades, Attrition, Time to Degree, and Indicators of productivity. It is clear, in regards to GPA, that non-cognitive strengths are not well represented within these success measures. However, based on the two prior recommendations: defining success measures and collecting comprehensive data, whole person assessment in education can test and refine non-cognitive strategies to improve student outcomes.

To do this, based on this research data and supported by Kyllonen's (2005) recommendations related to educational testing, attitudinal constructs, learning skills, personality factors, affective competencies, and performance factors should accompany these student outcome measures. This may be successfully accomplished by using established learning theory tools, such as Bloom's Affective and Cognitive taxonomies. In addition, as presented earlier, Claxton lists pedagogical improvements related to non-cognitive skills, and complementary of the traditional cognitive R's of education. Both of these techniques fulfil the call to test and refine strategies for better student success outcomes.

Using Bloom's taxonomy for cognitive and affective skills, in an attempt to merge a psycho-social pedagogical approach to non-cognitive and cognitive transformation, embodies this last recommendation to test and refine strategies for better student outcomes. The Table below (see Table 5.3) relates the learning involved in both cognitive and non-cognitive taxonomies, and supplements these learning tasks with pedagogical activities and vocabulary with which educators can operate and rubrics can be designed. Using this integrated taxonomy, for example, a non-cognitive rubric for an assignment in higher education may use learning tasks that require a combination of the non-cognitive and cognitive verbs, below.

Table 5.3: *Pedagogical Tasks Related to Bloom's Cognitive and Affective Taxonomies*

Bloom's Cognitive Taxonomy	Bloom's Affective Taxonomy	Key pedagogical tasks of BOTH
Level 1: Remembering Rote remembrance and recitation	Level 1: Receive Open & Engaged	List, Define, Duplicate, Memorize, Report, Reproduce; Acknowledge, Ask, Be Open To, Discuss, Feel Focus, Follow, Listen To, Perceive, Show Tolerance For.
Level 2: Understanding Explaining and contributing to knowledge	Level 2: Respond Actively Responding	Interpret, Exemplify, Classify, Summarize, Infer, Compare, Explain, Paraphrase, Discuss; Answer, Clarify, Contribute, Follow Along, Help Team, Perform, Question, React Reply, Seek Clarification And Write.

Level 3: Applying Relating meaning	Level 3: Value Personal Meaning	Demonstrate, Dramatize, Interpret, Solve, Use, Illustrate, Convert, Discover, Discuss, Prepare; Argue, Attain, Challenge, Confront, Criticize, Debate, Examine, Justify, Participate, Persuade, Support.
Level 4: Analyzing Breaking down and identifying critical components	Level 4: Organize Express personal points of views	Compare, Contract, Criticize, Differentiate, Discriminate, Question, Classify, Distinguish, Experiment; Arrange, Build, Decide, Defend, Develop, Discuss, Identify With, Judge, Relate, Prioritize, Reconcile, And Theorize.
Level 5: Evaluating 	Level 5: Internalize Embody beliefs	Appraise, Argue, Defend, Judge, Select, Support, Evaluate, Debate, Measure, Select, Test, Verify; Act, Avoid, Believe, Carry Out, Continue To, Influence, Manage, Practice, Resist, Resolve, Revise And Solve.
Level 6: Creating		Assemble, Generate, Construct, Design, Develop, Formulate, Rearrange, Rewrite, Organize, Devise

Recommendations for action, given this study's findings, are to incorporate cognitive and affective levels of learning at the community college level. An explicit way of accomplishing this is by incorporating the three recommendations related to transforming education. By defining non-cognitive traits as related to success, assessing for and collecting data regarding these skills, and refining rubrics and strategies already used for cognitive learning in higher education, educators can more overtly attend to non-cognitive learning.

To meet this recommendation, non-cognitive rubrics related to the learning tasks used in Bloom's cognitive and affective taxonomies to compose assignments in curriculum activities, such as the ones above, can be incorporated into the practice of higher education. Tools, such as Bloom's cognitive and affective taxonomies, emphasize and value this type of non-cognitive learning. Additionally, educators can incorporate Claxton's (2002) call for transformation in learning power within the classrooms, by proposing a practical application of non-cognitive skills in education. This advantages what educators understand about learning and the brain.

For example, Claxton argues that four 'R's' should simultaneously exist with traditional cognitive based Reading, Writing, and Arithmetic. Resilience is the first of Claxton's (2002)

non-cognitive strengths recognized as missing in education. It is associated with the ROPELOC's Coping with Change Measure, and part of numerous socio-emotional constructs (Wosnitza & Peixoto, 2018). The definition of resilience is: "the human capacity to face, overcome and ultimately be strengthened by life's adversities and challenges" (Gerstein, 2013, para. 3). Resilience appears to be a higher order construct comprised of the ability to bounce back, manage emotions, have strength awareness, passion-driven focus, resourcefulness, an understanding of personal agency, the ability to connect to others, and includes problem-solving skills (Gerstein, 2013). Curriculum builders can see how the questions and activities related to innovative pedagogy and affective taxonomies (See Table 9) may address non-cognitive schema construction within the classroom in service of co-constructing 21st century skills, including resilience.

Claxton (2008) recommends teaching Resourcefulness, defining it as "being ready, willing and able to learn in different ways" (p. 2). This non-cognitive skill applies to adaptability, flexibility and open thinking and embodies a learner possessing a variety of learning strategies with insight and awareness of when each strategy is needed. Again, applying the pedagogical and learning activities and building curriculum around these may help to explicitly support this non-cognitive skill within the learning experience.

Reflection, according to Claxton (2008), is about "being ready willing and able to become more strategic about learning" (p. 2). He goes on to explain that reflection is a metacognitive skill related to socio-emotional learning, and represents self-concept and self-perception of one's own strengths and challenges. Reflection can be found in Bloom's taxonomies as related, both, to cognitive and affective skills. Self-reflection is also a component of self-assessment measures. Altering curriculum to explicitly incorporate this level of learning

should not be a leap from standard educational practice, and appears a valuable component to educational transformation that incorporates 21st century workforce skills by first valuing and defining them, by collecting data related to these skills, and then by refining strategies to explicitly teach these non-cognitive capacities.

The final component for which Claxton (2008) advocated is Reciprocity. He defined reciprocity as "being ready, willing and able to learn alone and with others" (p. 2). This non-cognitive skill links to social and communication skills, leadership and teamwork skills. Incorporating educational lessons through curriculum design that shape schemas related to these levels of non-cognitive skills using self-awareness components emphasize the importance of non-cognitive learning within the educational experience. Instructors can refine strategies that emphasize these non-cognitive student success outcomes. Experiments with these instructional designs may be pivotal components of future research.

The non-cognitive R's used to accompany the traditional cognitive emphasis on reading, writing, and arithmetic are examples of how the *new American College* may marry content and applied skill, unmasking the false dichotomy between cognitive and non-cognitive skills, addressing both with learning and schema development, in order to wed theory and practice. Using this integrative model, cognitive and non-cognitive rubrics can be built as part of standard curriculum delivery and assessment, thereby embodying the recommendation for reform that calls for testing and refining strategies related to improving student outcomes.

Most educational research recognizes the effectiveness of rubrics focused on content or cognitive skills (Reddy, 2007). Assessing student learning, however, as schema construction based on attitudes, behaviors and perceptions is an under-researched area. Since 2007, some studies have emerged to expand on how rubrics can be used as non-cognitive matrices to impact

these self-and-other schemas. *Deeper learning* initiatives. For example, Pellegrino & Hilton (2012) acknowledge the interconnection of cognitive, non-cognitive, and intra/inter-personal components related to learning. These initiatives also build on the need for learning experiences to be assessment-focused, including the teaching and learning of non-cognitive skills (Bransford, Brown, & Cocking, 2000; Grover, 2015).

In keeping with the requirement of defining appropriate success measures and the collection of data, it is important to incorporate testing and refine strategies for improved outcomes. It is helpful to understand Barron and Darling-Hammond's (2008) guidelines on assessment of meaningful learning: 1) Assessments must require application of desired concepts and skills; 2) Rubrics must define and organize successful performance; 3) Assessments should be frequent and formative in order to build dialog around expectations and feedback (Barron & Darling-Hammond, 2008). Deeper Learning initiatives add that assessments must also include both cognitive performance and transferability of learning, and non-cognitive skills that support learning such as abilities related to collaboration, complex problem-solving, planning, reflection, and communication can be assessed and reinforced by using non-cognitive rubrics related to curricular assignments (Conley & Darling-Hammond, 2013).

Kafka (2016) developed a list of non-cognitive assessment instruments supporting the development, identification, and measurement of these skills at the college level. This research supports the development of non-cognitive skills that "promotes students' ability to think cogently about information, manage their time, get along with peers and instructors, persist through difficulties, and navigate the varied landscape of academic and non-academic requirements that college students face…" (Kafka, 2016, p. 1). These strengths may be implicitly incorporated in the learning experience; however, developing assessment practices that

incorporate both non-cognitive and cognitive skills using data driven methods is essential for educational reform. This study reveals that GPA does not substantively represent non-cognitive skills which are required for 21st century success. This finding requires focus, then, on measurements that *prove,* beyond anecdotally, workforce readiness outcomes, of students graduating from this institution.

Though emerging research is transforming the way educators look at the college educational experience, and finally highlighting the non-cognitive skills important to 21st century workforce success, research examining these rubrics, and implementing the theory in practice is substantively absent from literature. Some studies review the impacts of social-emotional learning, for example, but many of these studies relate to only public school-aged children and adolescents. Research regarding the growth possible in the college student's mindset is lacking, and strongly encouraged as the call for transformation in educational policy and reform continues.

Recommendations for Further Study

These preliminary findings, of course, do not tell a full and integrative story. Future research could use these specific skills added to pedagogical interventions in order to more effectively use this comprehensive non-cognitive data. Establishing measures and identifying these strengths, along with pedagogical activities that may enhance or improve the schemas related to these non-cognitive skills could be an important direction for future research.

Future research in the area of non-cognitive assessment and development should explore and integrate the relationships of cognitive and non-cognitive measures in establishing innovative pedagogical approaches. These could include: learning in informal settings (crossover learning), learning by debate (learning through argumentation), unintentional learning

(incidental learning), learning from experience by interpreting information related to what is already known (context-based learning), learning that breaks large problems into smaller parts (computational thinking), learning with applied tools and practices (learning by doing), learning involving self-awareness and active interaction with the real/simulated world (embodied learning), personalized learning (adaptive teaching), understanding mindsets in cognitive and non-cognitive aspects (analytics of emotions), and data driven assessment collected across time (stealth assessment) (Sharples et al. 2015). Future research should focus on experimenting with these pedagogical shifts, assessing for before and after interventions and examining causal links related to non-cognitive growth.

Pedagogical guidelines, and tools such as Bloom's cognitive and affective taxonomies, can transform curriculum and teaching to highlight these non-cognitive strengths so necessary to workforce success in the 21st century. These pedagogical changes will have to include cognitive development, social-emotional development, and career development processes. These, also, will combine the foundational literacies required in higher education (literacy, numeracy, scientific information), competencies required for 21st century skills (critical thinking/problem-solving, creativity, communication, and collaboration), and will emphasize the character qualities (curiosity, initiative, persistence, adaptability, leadership, and inter- and intra-personal social and cultural awareness) (WEF, 2015) required in the *New American College*. GPA cannot stand as the primary academic measure, especially as time, technology and the requirements of the changing workscape emphasize specific non-cognitive skills.

Leadership should explicitly promote coping skills, engagement and quality seeking which will endorse learning through non-cognitive emphasis. Using the three US Department of Education's recommendations and Maine Community College System's call for change, future

research should focus on valuing and defining non-cognitive success measures, collecting data regarding these measures, and testing and refining pedagogical strategies that enhance both cognitive and non-cognitive skills. To accomplish this, non-cognitive self-assessments should be incorporated, explicit meta-teaching should occur as evidenced by rubrics, and evaluation and refinement of preferred non-cognitive skills should be targeted. Cognitive and non-cognitive assessment should be integrated into curricular assignments; and, assignments should incorporate cognitive and affective components, as assessed by rubrics. Additionally, professional development opportunities that highlight the non-cognitive components of learning should also be implemented.

To incorporate non-cognitive learning educators must relate material to self, prior knowledge, and student beliefs. It may be argued that this already occurs, however the explicit evidence and data for this does not readily exist at the community college level. Additionally, this research indicates that though graduating students are leaving this institution with non-cognitive skills, their scores are more than 35 points less than ideal scores on the instruments used, and within the mean score ranges established by this population, 35-40% are graduating with below-average (low) self-perceptions of their own non-cognitive capacity.

This social-emotional focus in higher education is an important precursor to transformative change. It includes making material meaningful and important to the students. It also requires both implicit teaching through role-modeling and reinforcement, and explicit teaching through direct relationship between content and applied information. Using data to support that this learning is accomplished in higher education should be a focus of future research.

Educators can present modules addressing personality characteristics and self-assessment as part of a student's formal learning in academia. Simultaneous to this, teacher-assessment highlighting students' demonstrable capacity should accompany student self-assessments. This type of character education fits the mission of the college regarding workforce readiness, because it embodies non-cognitive skills which translate to workforce readiness. Prioritizing the transferability of skills, and the intentional malleability of schema construction through non-cognitive focus, including socio-emotional learning programs, is a transformation required in higher education. This approach does not replace cognitive focus, but it is a necessary ancillary supplement to it. Identifying these teaching opportunities is essential.

College instructors as collaborative leaders who co-create experiences with students, are important components in community colleges, as often they are practitioners in their own field. They can serve as agents of transformation by bringing information from psycho-social realms related to professional and workplace experiences to the realm of education and learning. Instructors that conspire to create a reality of non-cognitive success outcomes, both personally and professionally, need to understand the reciprocal and recursive components involved in the stories we tell ourselves, and how these stories represent schemas of self-and-others, and relate to future experiences. Qualitative research can support the building of these narratives, and should be advocated for in future study. Though a non-cognitive focus should remain an ever-present theme, both quantitative and qualitative methods can reveal important features of that theme. Future research can focus on qualitative interviews, following the quantitative data collection, to provide dynamic and robust correlational and causal insights.

Additionally, future research could exploit some of the preliminary program data revealed, here. Data can be collected to identify the field-specific non-cognitive skills that are

most required of the students entering their particular workforce field. For instance, the high score in culinary arts may be related to certain character traits indicative of individuals drawn to the field of hospitality; similarly, the low score in non-cognitive skills within the Radiological Technology Program may represent a hole in training regarding non-cognitive skills necessary for success in this field, which tends to emphasize interaction with technology and science as hard skills, but may not be emphasizing the soft skills required in this field. Though this level of analysis was beyond the scope of this study, assessing the skills required and developed in different disciplines and programs might be an important component of transformational educational reform which simultaneously targets both cognitive and non-cognitive skills.

Correlational studies reveal strong relationships between non-cognitive skills and success outcomes (Lee & Strom, 2014; Renshaw et al., 2014; You, Furlong, Felix, & O'Malley, 2015), however experimental methods must employ more causal inferences. Experimental interventions that measure before and after scores may yield more evidence of the efficacy of intervention aimed at teaching/shaping these skills. Using self-assessments before programming, and comparing self-assessment scores after the educational intervention is a basic experimental methodology. Similarly, pedagogical assessment strategies can be experimentally evaluated with data collection before and after, including using classes as controls and *treatment* groups. Though the operational definitions and measuring instruments have been debated and lack consistent and standardized methodologies, experimenting with instruments and measures could encourage more consistent and conciliatory vocabulary in order for educators to identify, define, as assess non-cognitive components. There are multiple psycho-social instruments available, clinically, however there is no single instrument to measure the non-cognitive skills related to educational achievement. Both of these areas require further research and study.

Additionally, future research should incorporate longitudinal data and data collection regarding the staying power of changes and interventions. Further research related to the differences between domain specific cognitive skills, learning styles in metacognitive skills-building, and explicit and implicit learning techniques must be conducted in order to better understand how teachers can use cognitive pedagogies to teach non-cognitive skills, specifically assessing the long term impact and longevity of these skills. Furthermore, malleability and social-emotional learning research should be better assessed in college-aged students within higher education. Historically, this malleability and staying power research is primarily studied with school age children, developing, and with potentially more malleability than college students. Increasing the number of studies significant to higher education will be a worthwhile endeavor to assess the growth capacity within these constructs.

Student strength and student deficit models need to be integrated into a more dynamic and vibrant paradigm that asks instructors to play a vital part in the experiences of their undergraduates through both cognitive and non-cognitive teaching and assessment. This researcher believes that understanding non-cognitive components of experience may be the key to implementing promotive achievement strategies which can improve student outcomes. Future studies can be directed toward strategies that include research into non-cognitive rubrics, and quantitative data from experimental design studies. The implications for further study are clear, and can result in a better understanding of the complex and interrelated non-cognitive components required in the workforce. This creates greater opportunity for teachers and students alike. Additionally, employers and the economic environment, as a whole, can benefit from the integrative shift to emphasize both cognitive and non-cognitive strengths through the teaching and assessment of both hard and soft skills. The three guiding recommendations within this

framework for transforming community college education can provide the structure for these studies. This effort would bridge the gap between psycho-social fields and education, content skills and applied skills, cognitive skills and non-cognitive skills, theory and practice, and truly transform higher learning into the ideal of the *New American College*.

This study provides support for a new model to understand the social nature of schema construction involved in learning. Specific implications were discussed through this chapter. Results of this study can be used to specifically identify individual's self and other schemas through the identification and measurement of non-cognitive strengths. These strengths support defining success measures inclusive of non-cognitive skills related to workforce success. Collecting comprehensive data, from self-assessment measures to teacher-assessment measures, serves to highlight the investment in workforce readiness within community college institutions. Additionally, testing and refining these success outcomes through the use of non-cognitive rubrics should accompany cognitive rubric assessment standards. Bloom's Taxonomy and Claxton's four R's are rich tools with which educators can supplement their teaching practices.

Graduating 35-40% of the responding students with a self-perception of non-cognitive capacity as less than average, and using an academic measure (GPA) that only captures 4 of 26 non-cognitive skills, cannot be a continued practice. Individuals, communities, and institutions can use this integrative framework to accentuate both cognitive and non-cognitive skills, specifically ensuring both cognitive and non-cognitive skills are explicitly addressed in teaching and learning schemas for students, employess, and within the educational culture students find themselves. True transformation can occur when there's an integration and emphasis on strengths which highlights the malleability and possibility of growth and development under each person's individual control.

Throughout this dissertation, a transdisciplinary systems and growth mindest was taken, and these specific factors embody the success values within the 21st century. Leadership should accept this integrative perspective in order to impact success, across all domains. Throughout this work, statistics and findings, across fields, were higlighted in order to suggest the *New American College* is not only a possible endeavor, but a necessary one, especially in light of the socio-emotional difficulties and deficits so regularly identified in today's culture. Shining a light on strengths, and how these strengths comprise both cognitive and non-cognitive, hard and soft, and content and applied skills, may bring Positive Psychology from counseling into the classroom.

Conclusions

The purpose of this study was to explore the relationship between non-cognitive 21st century workforce skills as measured by two strengths-based, behaviorally demonstrable, self-assessment questionnaires. Previous portions of this chapter explored the measurement and properties of statistically significant non-cognitive skills revealed by these instruments. Tables were used to depict the correlations, illustrate the schemas assessed, and focus on the specific non-cognitive skills that emerged repeatedly in the analyses. Additionally, limitations were identified and explored. This chapter focused on relating these findings to the implications and application, or specific pedagogical or teaching methodology using Bloom's Taxonomy and Claxton's revision of the 'R's' needed in education, in order to emphasize the non-cognitive skills found to be important to both success in college and success in the workforce. The final section of this chapter emphasized recommendations for action, and concluded with recommendations for future research based on the significance of these preliminary findings.

Change comes in many shapes and sizes, in different forms with different faces. It presents tensions and constraints that require navigation, methodology, and management. Change ignites process and influences products. The meaning an individual makes of their experiences impacts the way things are seen, what is looked for, and what is believed. Many interpretations of one experience can exist, and it is primarily important for a student to purposefully frame their experiences in a way that enhances what is known, the strengths possessed, and what can be. Purposeful teaching and learning impacts perception of self, others, and experience. Teaching students that their intentional psycho-social-emotional self-regulation and experience-framing constructs their meanings, and creates their experience, may be key to building their skills as learners. Cognitive and non-cognitive teaching and learning is a necessary component for this transformational shift.

Community colleges educate students who are under-prepared, and though some enroll with the intention to earn an Associate's degree or certificate, and some intend to transfer to complete a Baccalaureate degree, only about 51% who start at community colleges earn a certificate, a degree, or are enrolled in a college up to six years later (Center For Community College Student Engagement, 2014). These findings and recommendations may reduce this deficit. According to ACT (2010) "Community colleges lose about half of their students before the beginning of their second year of college" (CCCSE, 2014, p. 23). Rates of drop-out, attrition, and lack of re-enrollment are startling, and studies that may reveal problems of practice in this environment will serve to improve practice and performance.

The conceptual framework that drives this work calls for an integrated perspective, using the constructive, developmental and systems approaches subsumed within Positive psychology to assess perception of self in quantified terms. The SEHS-HE was used to determine covitality

scores, while the ROPELOC was administered to address life effectiveness schemas, both representing non-cognitive, 21st century workforce skills. This study suggested a high correlation between these measures, to each other, through component and composite scores. It also reflected that only 15% of the 26 non-cognitive skills examined correlate with GPA score, representing a deficit in measurement related to assessing for non-cognitive skills.

The ROPELOC did correlate on four specific non-cognitive measures to academic GPA. No non-cognitive skills represented by the SEHS-HS correlated with GPA, indicating that this measure, which is so highly correlated with subjective well-being and positive performance outcomes, is not related to the primary academic measure. However, the composite scores of these two non-cognitive measures are strongly correlated to each other, supporting that these non-cognitive strengths are definable, identifiable, and measurable. After examining the data, it is clear that non-cognitive skills are not well-represented in the GPA measure. A framework for transformation was introduced based on these preliminary findings, and it is this researcher's hope that these three distinct recommendations are explored in future research.

Community colleges are preparatory grounds for career training, and are advantaged intersections of ecological systems where role of student is often found in conjunction with role as parent, provider, or professional. These spaces are places to examine the interconnections and links among personal, social, and psychological domains, and to support a redefinition of success in these realms in accordance with non-cognitive strengths.

The basic scaffolding of learning builds on the premise that what learners experience shapes how they become, and how they become shapes how they perceive their experiences. Positive Psychology research links these three pillars, specifically highlighting that positive institutions can create positive experiences which create positive traits. If education can more

purposefully tap into psychotherapeutic role, then building the non-cognitive scaffolding required for success will lead to traits and skills development applied to academia, and can carry over to personal and professional realms. This can only happen with effective non-cognitive definitions, data collection, and refinement.

Measuring these non-cognitive schemas with the SEHS-HE and the ROPELOC survey provided a starting point in evaluating whether the educational experience received at the community college helps a student construct effective non-cognitive capacities. Bringing this social science perspective into the classroom is a pivotal part of educational transformation in the 21st century. Exploring these complex, iterative, coalescing and synergistic components of social and individual success reveals that these can impact experiences in higher education, the workplace, and one's own experience of subjective well-being. These ideas are driven by historical research on non-cognitive variables mentioned throughout this study. Non-cognitive skills, cognitive skills, and the interactions of each, are impacted by schema construction, and learning throughout the developmental process. This learning process highlights the inter/intrapersonal processes regarding learning through experiences, highlighting significant processes useful to curriculum and pedagogical strategies available within higher education and training for the 21st century workforce. Educational leaders must understand the importance of these self/other schemas, as they possess the power to transform the student into a learner, leading to better success outcomes across domains. Without successful definition of these non-cognitive measures, without collecting the data based on these strengths, and without testing and refining strategies for these student success outcomes, educators fail to hold themselves accountable to this transformational possibility.

References

Abadzi, H. (2016). Training 21st-century workers: Facts, fiction and memory

illusions. *International Review of Education*, *62*(3), 253-278.

Abeysekera, L., & Dawson, P. (2015). Motivation and cognitive load in the flipped classroom:

definition, rationale and a call for research. *Higher Education Research &*

Development, *34*(1), 1-14.

Abramson, L., Seligman, M. & Teasdale, J. (1978). Learned helplessness in humans: Critique

and reformulation. *Journal of Abnormal Psychology*, *87(1)*, 49-74. Doi. 10.1037/0021-

843x.87.1.49 Retrieved from:

https://pdfs.semanticscholar.org/ef52/775276f83a46162a9b364335d9ee5ee73b99.pdf

Adams, G.R., & Marshall, S. K. (1996). A developmental social psychology of identity:

Understanding the person-in-context. *Journal of Adolescence*, *19*(5), 429–442.

Ahern, M. M. (2017). *Exploring the impact of a positive education program on the wellbeing of*

adolescent girls. (Doctoral dissertation, Queensland University of Technology).

Ahmed, S. R., Kia-Keating, M., & Tsai, K. H. (2011). A structural model of racial

discrimination, acculturative stress, and cultural resources among Arab American

adolescents. *American Journal of Community Psychology*, *48*(3-4), 181-192.

Aldridge, J., Ala'i, K., Fraser, B., & Fozdar, F. (2015). Creating a climate in which

students can flourish: A whole school intercultural approach. *International Journal of*

Whole Schooling, 11(2), 29-44.

American Foundation for Suicide Prevention. (2017). Suicide Statistics. Retrieved from:

https://afsp.org/about-suicide/suicide-statistics/

American Psychological Association. (2013). Guidelines for prevention in psychology. *American Psychologist*. Advance online publication. doi:10.1037/a0034569

Anderman, E. M. (2002). School effects on psychological outcomes during adolescence. *Journal of Educational Psychology, 94*(4), 795-809. http://dx.doi.org/10.1037/0022-0663.94.4.795

Andersen S.L., Teicher, M.H. (2008). Stress, sensitive periods and maturational events in adolescent depression. *Trends in Neuroscience, 31*(4), 183–191. [PubMed]

Appleton, J.J., Christenson, S.L., & Furlong, M.J. (2008). Student engagement with school: Critical conceptual and methodological issues of the construct. *Psychology in Schools*, 45, 5. Retrieved from: https://onlinelibrary.wiley.com/doi/abs/10.1002/pits.20303

Arias A.J., Steinberg, K., Banga, A., Trestman, R.L. (2006). Systematic review of the efficacy of meditation techniques as treatments for medical illness. *Journal of Alternative and Complementary Medicine, 12*, 817–832. [PubMed]

Assessment and Teaaching of 21st century Skills. ATC21S. (2015). The University of Melobourne. Retrieved from: https://education.unimelb.edu.au/arc/projects/completed/2012/atc21s

Au, K. H. (1998). Social constructivism and the school literacy learning of students of diverse backgrounds. *Journal of Literacy Research*, *30*(2), 297-319.

Autor, D. H., Levy, F., & Murnane, R. J. (2003). The skill content of recent technological change: An empirical exploration. *Quarterly Journal of Economics, 118*(4), 1279–1334.

Avey, J. B., Reichard, R. J., Luthans, F. and Mhatre, K. H. (2011), Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly, 22,* 127-152. doi:10.1002/hrdq.20070

Avey, J. B., Wernsing, T. S., & Mhatre, K. H. (2011). A longitudinal analysis of positive psychological constructs and emotions on stress, anxiety, and well-being. *Journal of Leadership & Organizational Studies, 18,* 216–228. doi:10.1177/1548051810397368.

Aydeniz, M., & Hodge, L.L. (2011). Is it dichotomy or tension: I am a scientist? No, wait! I am a teacher! *Cultural Studies of Science Education, 6*(1), 165-179.

Ayers, W. (2004). *Teaching toward freedom: Moral commitment and ethical action in the classroom*. Beacon Press.

Bacon, D.R., Bean, B. (2006). GPA in research studies: An invaluable but neglected opportunity. *Journal of Marketing Education, 28*(1), 35 – 42. Retrieved from: https://doi.org/10.1177/0273475305284638

Bamberg, M. (2007). Stories: Big or small. Why do we care? In M. Bamberg (Ed.), *Narrative - state of the art* (pp. 165-174). John Benjamins Publishing Company.

Bamberg, M. (2010). Blank check for biography? Openness and ingenuity in the management of the "Who-Am-I-Question." In D. Schiffrin, A. DeFina, & A. Nylund (Eds.). *Telling stories: Language, narrative, and social life* (pp. 109–121). Washington, DC: Georgetown University Press.

Bamberg, M. (2010). Who am I? Narration and its contribution to self and identity. *Theory & Psychology*, *21*(1), 1-22.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. doi:10.1037/0033-295X.84.2.191.

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall, Inc.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. Macmillan.

Bandura, A. Ross, D., & Ross, S. A. (1961). Transmission of aggression through the imitation of aggressive models. *Journal of Abnormal and Social Psychology*, *63*, 575-582

Bandura, A., Barbaranelli, C., Capara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, *67*, 1206–1222. doi:10.2307/1131888

Bandura, A., Barbaranelli, C., Caprara, G.V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, *67*(3). doi: 10.2307/1131888

Bannister, D. and Fransella, F. (1986). *Inquiring Man: the psychology of personal constructs,* 3rd Ed, London: Croom Helm.

Barron, B., & Darling-Hammond, L. (2008). Teaching for meaningful learning: A Review of research on inquiry-based and cooperative learning. Book Excerpt. *George Lucas Educational Foundation*.

Bartlett, F.C. (1932). *Remembering: A study in experimental and social psychology*. Cambridge, England: Cambridge University Press. Retrieved from: https://pdfs.semanticscholar.org/727e/7f158dc0839ef789e3cb99f3fc3f2e38e017.pdf

Basak, R., & Ghosh, A. (2011). School environment and locus of control in relation to job satisfaction among school teachers. *Procedia: Social and Behavioral Science*, *29*, 1199-1208. Retrieved from: https://www.sciencedirect.com/science/article/pii/S1877042811028151

Bass, B. (1985). Model of transformational leadership. In T.F. Mech & G.B. McCabe (Eds.). *Leadership and academic librarians* (66–82). Westport, CT: Greenwood, 1998.

Bass, B. M., & Steidlmeier, P. (1999). Ethics, character, and authentic transformational

      leadership behavior. *The Leadership Quarterly*, *10*(2), 181-217.

Bass, B.M. (1998), Transformational leadership: Industrial, military, and educational impact.

      Lawrence Erlbaum Associates, Mahwah, NJ.

Beals, D. E. (1998). Reappropriating schema: Conceptions of development from Bartlett and

      Bakhtin. *Mind, Culture, and Activity*, *5*(1), 3-24.

Beck, A. T. (1967). *Depression: Causes and treatment*. Philadelphia: University of Pennsylvania

      Press.

Beck, A. T., Epstein, N., & Harrison, R. (1983). Cognitions, attitudes and personality dimensions

      in depression. *British Journal of Cognitive Psychotherapy.*

Bell, L. & Stevenso, H. (2015). Towards an analysis of the policies that shape public education:

      setting the context for school leadership. *Management in Education, 29*(4),1-5.

Bennett, T., Savage, M., Silva, E., Warde, A., Gato-Cal, M. and Wright, D. (2009). *Culture,*

      Class, Distinction. London: Routledge.

Benson, P. L., & Scales, P. C. (2012). Developmental assets. In R. J. R. Levesque (Ed.),

      Encyclopedia of adolescence (667–683). New York, NY: Springer.

Biegel, G.M., Brown, K.W., Shapiro, S.L., Schubert, C.M. (2009). Mindfulness-based stress

      reduction for the treatment of adolescent psychiatric outpatients: A randomized clinical

      trial. *Journal of Counseling and Clinical Psychology*, *77*(5), 855–66. [PubMed]

Birdee, S.S., Yeh, G.Y., Wayne, P.M., Phillips, R.S., Davis, R.B., Gardiner, P. (2009). Clinical

      applications of yoga for the pediatric population: A systematic review. *Academic*

      Pediatrics, 9, 212–220.[PMC free article] [PubMed]

Black, D.S., Milam, J., Sussman, S. (2009). Sitting-meditation interventions among youth: A review of treatment efficacy. *Pediatrics*, *124*(3), 532–541. [PMC free article] [PubMed]

Blair, C., Diamond, A. (2008). Biological processes in prevention and intervention: the promotion of self-regulation as a means of preventing school failure. *Development and Psychopathology, 20*(3), 899–911. [PMC free article] [PubMed]

Blair, C., Razza, R.P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development*, *78*(2), 647–663. [PubMed]

Blakemore, S., Choudhury, S. (2006). Development of the adolescent brain: Implications of executive function and social cognition. *Journal of Child Psychology and Psychiatry*, *47*, 296–312. [PubMed]

Bloom, T. M. E. (1965). *Bloom's taxonomy of educational objectives*. Longman.

Bloom, B. S., Krathwohl, D. R., & Masia, B. B. (1964). Taxonomy of educational objectives, handbook ii: Affective domain. New York: David McKay Company. Inc. *ISBN 0-679-30210-7, 0-582-32385*, *1*.

Boehm, J. K., Chen, Y., Williams, D. R., Ryff, C., & Kubzansky, L. D. (2015). Unequally distributed psychological assets: Are there social disparities in optimism, life satisfaction, and positive affect? *PLoS ONE*, *10*(2), e0118066. http://doi.org/10.1371/journal.pone.0118066

Bolden, R., Petrov, G., & Gosling, J. (2008). Tensions in higher education leadership: A multi-level model of leadership practice. *Higher Education Quarterly, 62*(4), 358-376.

Bolman, L. G., & Deal, T. E. (1991). Leadership and management effectiveness: A multi-frame, multi-sector analysis. *Human Resource Management, 30*(4), 509–534.

Bolman, L., & Deal, T. (2008). *Reframing organizations: Artistry, choice, and leadership* (4th ed.). San Fransciso: Jossey-Bass.

Bolman, L., & Deal, T. (2013). *Reframing organizations: Artistry, choice and leadership* (5th ed). San Francisco, CA: Jossey-Bass.

Boman P., Mergler A., & Pennell, D. (2017). The effects of covitality on well-being and depression in Australian high school adolescents. *Clinical Psychiatry, 3*(2), 15. doi:10.21767/2471-9854.100045 http://clinical-psychiatry.imedpub.com/the-effects-of-covitality-on-wellbeing-and-depression-in-australian-high-school-adolescents.php?aid=20436

Bonner, F. I., Lewis, C. W., Bowman-Perrott, L., Hill-Jackson, V., & James, M. (2009). Definition, identification, identity, and culture: A unique alchemy impacting the success of gifted African American millennial males in school. *Journal for the Education of the Gifted*, *33*(2), 176-202.

Borg, S. (2015). *Teacher cognition and language education: Research and practice*. Bloomsbury Publishing.

Bowles, S., & Gintis, H., (1976). *Schooling in capitalist America: Educational reform and the contradictions of economic life*. New York, NY: Basic Books.

Bowles, S., Gintis, H., & Osborne, M. (2001). The determinants of earnings: A behavioral approach. *Journal of Economic Literature*, *39*(4), 1137–1176

Bransford, J. D., Brown, A. L., & Cooking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academies Press

Brewer, W. F., & Nakamura, G. V. (1984). The nature and functions of schemas. Technical Report No. 325.

Brief, A., Weiss, H. (2002). Organizational Behavior: Affect in the workplace. *Annual Review of Psychology*, *53*(1), 279-307. Retrieved from: https://www.researchgate.net/publication/11603892_Organizational_Behavior_Affect_in the_Workplace.

Brofenbrenner, U. (1989). Ecological systems theory. *Annals of Child Development*, *22*, 723–742.

Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1989). Ecological systems theory. *Annals of Child Development, 6*, 187-24.

Brookmeyer, K. A., Fanti, K. A., & Henrich, C. C. (2006). Schools, parents, and youth violence: A multilevel, ecological analysis. *Journal of Clinical Child and Adolescent Psychology*, *35*(4), 504-514.

Brown, N. J., Lomas, T., & Eiroa-Orosa, F. J. (Eds.). (2017). *The Routledge international handbook of critical positive psychology*. Routledge.

Brownell, P. (1981). Participation in budgeting, locus of control and organizational effectiveness *The Accounting Review*, *56*(1981) 844-860.

Bryant, F. B., & Veroff, J. (2006). *The process of savoring: A new model of positive experience*. Mahwah, NJ: Lawrence Erlbaum.

Burke, C.A. (2009). Mindfulness-based approaches with children and adolescents: A preliminary review of current research in an emergent field. *Journal of Child and Family Studies, 19*(2), 133–44.

Burman, E. (2016). *Deconstructing developmental psychology*. Routledge.

Burns, J.M. (1978). *Leadership*. New York: Harper Perennial.

Burns, J.M. (1996). Empowerment for change: A conceptual working paper. The James

    MacGregor Burns Academy of Leadership, University of Maryland. Retrieved from:

    http:/www.academy.umd.edu/scholarship/casl/klspocs/jburn_p1.htm

Burrow, A. L., & Hill, P.L. (2011). Purpose as a form of identity capital for positive youth

    adjustment. *Developmental Psychology, 47*(4), 1196-206. 10.1037/a0023818.

Cahn, S. (2014). *Exploring ethics: An introductory anthology*. (3rd ed.) New York, NY.: Oxford

    University Press.

Calvete, E., & Orue, I. (2012). Social information processing as a mediator between cognitive

    schemas and aggressive behavior in adolescents. *Journal of Abnormal Child*

    Psychology, *40*(1), 105-117.

Capra, F. (2002). Complexity and life. *Emergence*, *4*(1-2), 15-33.

Carneiro, P., Heckman, J. (2003) Human capital policy. Inequality in America: What role for

    human capital policy? Eds Heckman JJ, Krueger A (MIT Press, Cambridge, MA).

Carr, M., & Claxton, G. (2002). Tracking the development of learning dispositions. *Assessment*

    in Education, 9(1), 9–37. [Taylor & Francis Online], [Google Scholar]

Carroll, J. B. (1993). *Human cognitive abilities: A survey of factor analytic studies*. New York,

    NY: Cambridge University Press.

Caruso, D. R., Salovey, P., Brackett, M., & Mayer, J. D. (2015). The ability model of emotional

    intelligence. *Positive psychology in practice: Promoting human flourishing in work,*

    health, education, and everyday life, 545-558.

Casner-Lotto, J., & Benner, M. (2006). Are they really ready for work? Employers' perspectives

    on the basic knowledge and applied skills of new entrants into the 21st century

    workforce. New York: The Conference Board, Inc., the Partnership for 21st Century

Skills, Corporate Voices for Working Families, & the Society for Human Resource Management.

Casner-Lotto, J., Benner, M.W. (2006). Are they really ready to work? Retrieved from: https://files.eric.ed.gov/fulltext/ED519465.pdf

Center for Community College Student Engagement. (2014). A matter of degrees: Practices to pathways. High-impact practices for community college student success. *Center for Community College Student Engagement*. Retrieved from: https://www.ccsse.org/docs/Matter_of_Degrees_3.pdf

Center for Community College Student Engagement. (2014). Contingent commitments: Bringing part-time faculty into focus. *Center for Community College Student Engagement.*

Center for Community College Student Engagement. CCCSE. (2013). A Matter of degrees: High-impact practices for community college student engagement. Retrieved from: https://www.ccsse.org/docs/Matter_of_Degrees_2.pdf

Center for Community College Student, Engagement. (2012). A matter of degrees: Promising practices for community college student success- A first look. Retrieved from: https://www.ccsse.org/docs/Matter_of_Degrees.pdf

Chafouleas, S. M., & Bray, M. A. (2004). Introducing positive psychology: Finding a place within school psychology. *Psychology in the Schools*, *41*, 1–5. doi:10.1002/pits.1013.

Champagne, D.L., Bagot, R.C., van Hasselt, F., Famakers, G., Meaney, M.J. et al. (2008). Maternal care and hippocampal plasticity: evidence for experience-dependent structural plasticity, altered synaptic functioning, and differential responsiveness to glucocorticoids and stress. *Journal of Neuroscience, 28*(23), 6037–6045. [PubMed]

Claxton, G. (1997). *Hare brain, tortoise mind: Why intelligence increases when you think less*. Fourth Estate, London.

Claxton, G. (1999). The Anatomy of Intuition. In T. Atkinson & G. Claxton (Eds) *The Intuitive Practitioner: on the value of not always knowing what one is doing*. Buckingham: Open University Press.

Claxton, G. (2001). *Wise up: Learning to live the learning life*. Network Educational press, Stafford.

Claxton, G. (2002). *Building learning power: Helping young people become better learners*. TLO Ltd, Bristol.

Claxton. G. (2004). *Teaching children to learn*. National Primary Trust, Birmingham.

Claxton, G. (2005). *An intelligent look at emotional intelligence*. Association for Teachers and Lecturers, London.

Claxton, G. (2006). Expanding the capacity to learn: A new end for education? Retrieved from: http://www.buildinglearningpower.com/wp-content/uploads/2015/09/19.pdf

Claxton, G. (2008). Cultivating positive learning dispositions. Retrieved from: https://www.seas.upenn.edu/~eas285/Readings/Claxton.Learning%20Dispositions.pdf

Claxton, G. (2015). Papers. Retrieved from: https://www.guyclaxton.net/papers

Claxton, G. (2018). Deep rivers of learning. *Phi Delta Kappan*, *99*(6), 45-48. Retrieved from: http://journals.sagepub.com/doi/10.1177/0031721718762422

Claxton, G., & Lucas, B. (2016). The hole in the heart of education (and the role of psychology in addressing it). *Psychology of Education Review*, *40*(1), 4-12.

Claxton, G., Chambers, M., Powell, G. H., & Lucas, B. (2011). *The learning powered school: Pioneering 21st century education*. Bristol: Tlo Limited.

Claxton, G., Chambers, M., Powell, G., & Lucas, B. (2011). The learning powered school. *Pioneering 21st Centrury Education*.

Claxton, G., Crick, R.D., Broadfoot, P. (2010). Developing an effective lifelong learning inventory: The ELLI Project. Retrieved from: https://www.tandfonline.com/doi/abs/10.1080/0969594042000304582

Coghlan, D. (2009). Toward a philosophy of clinical inquiry/research. *The Journal of Applied Behavioral Science*, *45*(1), 106-121.

Coghlan, D., & Brannick, T. (2014). *Doing action research in your own organization*. Sage.

Cohen, A., & Brawer, F. (2008). *The American community college* (5th ed.). Hoboken: Wiley.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Côté, J.E, (1996). *Identity: A multidimensional approach*. In G.R. Adams, R. Montemayor, & T.P. Gullotta   (Eds.), *Psychosocial development during adolescence* (pp. 130-180). London, UK: Sage.

Cole, M., & Wertsch, J. V. (1996). Beyond the individual-social antinomy in discussions of Piaget and Vygotsky. *Human Development*, *39*(5), 250-256.

Conley, D. T. (2010). *College and career ready: Helping all students succeed beyond high school*. John Wiley & Sons.

Conley, D. T., & Darling-Hammond, L. (2013). *Creating systems of assessment for deeper learning*.

Connelly, B. S., & Ones, D. S. (2010). An other perspective on personality: Meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin*, *136*(6), 1092–1122.

Cooper, R., & Schinder, S. (2013). *Business Research Methods*. New York: McGrawHill.

Cowan, K. C. (2014). School psychology awareness week: strive. Grow. *THRIVE!*

    Communiqué, *42*(8), 31.

Craig, A.D. (2009). How do you feel--now? The anterior insula and human awareness. *National*

    Review of Neuroscience, *10*(1), 59–70. [PubMed]

Crede, M., & Kuncel, N. R. (2008). Study habits, skills, and attitudes: The third pillar supporting

    collegiate academic performance. *Perspectives on Psychological Science*, *3*(6), 425–453.

Creswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative*

    and qualitative research. Boston, MA: Pearson.

Crossley, J. G. (2017). Assessing the non-cognitive domains: Measuring what matters well.

    In *Innovative Practices for Higher Education Assessment and Measurement* (pp. 348-

    372). IGI Global.

Csikszentmihalyi, M. (1991). *Flow: The psychology of optimal experience*. New York:

    HarperPerennial.

Cubberley, E. P. (1919). *Public education in the United States: A study and interpretation of*

    American educational history: An introductory textbook dealing with the larger problems

    of present-day education in the light of their historical development. Boston: Houghton

    Mifflin.

Curry, L. A., Snyder, C. R., Cook, D. L., Ruby, B. C., & Rehm, M. (1997). Role of hope in

    academic and sport achievement. *Journal of Personality and Social Psychology*, *73*(6),

    1257.

Dahlin, E., Nyberg, L., Bäckman, L., Neely, A.S. (2008). Plasticity of executive functioning in

    young and older adults: Immediate training gains, transfer, and long-term

    maintenance. *Psychology of Aging, 23.* 720–730. [PubMed]

Dahlsgaard, K., Peterson, C., & Seligman, M. E. (2005). Shared virtue: the convergence of

    valued human strengths across culture and history. *Review of General Psychology*, *9*(3),

    203.

Dai, D. Y., Swanson, J. A., & Cheng, H. (2011). State of research on giftedness and gifted

    education: A survey of empirical studies published during 1998—2010 (April). *Gifted*

    Child Quarterly, *55*(2), 126-138.

Dailey, R. (1980). Relationship between locus of control, task characteristics, and work attitudes.

    Psychological Reports, 47, 855-861.

Davidson, J., Smith, M. M., & Bondi, L. (Eds.). (2012). *Emotional geographies*. Ashgate

    Publishing, Ltd.

Davidson, R. J., & McEwen, B. S. (2012). Social influences on neuroplasticity: stress and

    interventions to promote well-being. *Nature Neuroscience*, *15*(5), 689.

Davies, A., Fidler, D., Gorbis, M. Institute for the Future (IFTF). (2011). Future work skills:

    2020. Retrieved from: http://www.iftf.org/uploads/media/SR-

    1382A_UPRI_future_work_skills_sm.pdf

Davis, M. H. (2018). *Empathy: A social psychological approach*. Routledge.

de Vries, M. F. K. (2001). Creating authentizotic organizations: Well-functioning individuals in

    vibrant companies. *Human Relations*, *54*(1), 101-111.

Deepak, G. (2012-07-18). Hersey-Blanchard Situational Leadership. Retrieved

    from: https://www.youtube.com/watch?v=kqp8PsA73io

DeLamater, J., & Myers, D. (2011). *Social psychology*. Belmont, CA: Wadsworth Cengage

DeRobertis, E.M. (2017). *The phenomenology of learning and becoming: Enthusiasm, creativity, and self-development*. NY: NY. Palgrave Macmilliam.

Dewey, J. (1909). *Moral principles in education.* Boston: Houghton Mifflin Company.

Dewey, J. (1910). Science as subject-matter and as method. *Science*, *31*(787), 121-127.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: The Macmillan Company.

Dewey, J. (1917). Learning to earn: The place of vocational education in a comprehensive scheme of public education. *School and Society, 5*(1917), 331-335.

Dewey, J. (1921). *Aims and ideals of education*. In *Encyclopedia and Dictionary of Education,* Vol I., edited by Foster Watson, London.

Diamond, A., Lee, K. (2011). Interventions shown to aid executive function development in children 4 to 12 years old. *Science*, *333*(6045), 959–64. [PMC free article] [PubMed]

Diener, E., & Seligman, M. E. (2002). Very happy people. *Psychological Science*, *13*(1), 81-84.

Diener, E., & Tay, L. (2017). A scientific review of the remarkable benefits of happiness for successful and healthy living. *Happiness*, 90.

Diener, E., Seligman, M. E., Choi, H., & Oishi, S. (2018). Happiest people revisited. *Perspectives on Psychological Science*, *13*(2), 176-184.

Dowdy, E., Furlong, M. J., & Sharkey, J. D. (2013). Using surveillance of mental health to increase understanding of youth involvement in high-risk behaviors: A value added analysis. *Journal of Emotional and Behavioral Disorders, 21*, 33–44. doi:10.1177/1063426611416817

Dowdy, E., Furlong, M. J., Kaufman, B., Raines, T. C., Price, M., Murdock, J., … Bovery, B. (2014). Enhancing school-based mental health services with a preventive and promotive approach to universal screening for complete mental health. *Journal of Educational and Psychological Consultation*. (download)

Dowdy, E., Furlong, M., Raines, T. C., Bovery, B., Kauffman, B., Kamphaus, R. W., & ... Murdock, J. (2016). Enhancing school-based mental health services with a preventive and promotive approach to universal screening for complete mental health. *Journal of Educational & Psychological Consultation*, *25*(2-3), 178-197.

Dowdy, E*.,* Harrel-Williams, L., Dever, B., Furlong, M. J., Moore, S., Raines, T., & Kamphaus, R. (2016). Universal self-report screening in high school to predict internalizing symptoms. *School Psychology Review, 45,* 458–476. www.google.com/search?q=Universal+self-report+screening+in+high+school+to+predict+internalizing+symptoms.+&ie=utf-8&oe=utf-8

Driscoll, M. (1994). *Psychology of Learning for Instruction*. Boston: Allyn and Bacon.

Duckworth, A. et al., (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology, 6*, 1087 Retrieved from: http://www.sas.upenn.edu/~duckwort/images/Grit%20JPSP.pdf.

Duckworth, A. L., & Seligman, M. E. (2017). The science and practice of self-control. *Perspectives on Psychological Science*, *12*(5), 715-718.

Duckworth, A.L. & Seligman, M.E.P. (2005) Self-discipline outdoes IQ in predicting academic performance of adolescents, *Psychological Science, 16*(2), 939–944.

Dudley, N. M., Orvis, K. A., Lebiecki, J. E., & Cortina, J. M. (2006). A meta-analytic

      investigation of conscientiousness in the prediction of job performance: Examining the

      intercorrelations and the incremental validity of narrow traits. *Journal of Applied*

      Psychology, *91*(1), 40–57.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The

      impact of enhancing students' social and emotional learning: A meta‐analysis of

school‐   based universal interventions. *Child Development*, *82*(1), 405-432.

Dutton, J. E., & Ragins, B. R. (2017). Positive relationships in action: Relational mentoring

      and mentoring schemas in the workplace. In *Exploring Positive Relationships at*

      Work (pp. 91-116). Psychology Press.

Dweck, C. (1975). The role of expectations and attributions in the alleviation of learned

      helplessness. *Journal of Personality and Social Psychology, 31*(4), 674-685. Doi.

      10.1037/h0077149

Dweck, C. (1999). *Self Theories*. Psychology Press, Philadelphia PA.

Dweck, C. (2008). Can personality be changed? The role of beliefs in personality and

      change. *Current Directions in Psychological Science*, *17*, 391–394.

Dweck, C. et al., (2011). Academic tenacity: Mindsets and skills that promote long-term

      learning. Retrieved from:

      http://collegeready.gatesfoundation.org/LinkClick.aspx?fileticket=NP6zIG3zddI%3d&po

      rtalid=0.

Dweck, C. S. (1998). *The development of early self-conceptions: Their relevance for*

      motivational processes.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality and development*. Philadelphia: Psychology Press.

Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.

Dweck, C. S. (2012). *Mindset: How you can fulfill your potential*. Constable & Robinson Limited.

Eacott, S. (2010). Studying school leadership practice: A methodological discussion. *Issues in Educational Research, 20*(3), 220-233.

Education Endowment Foundation (EEF). (2013). Impact of non-cognitive skills on outcomes for young people. Retrieved from: https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Lit_Review_Non-CognitiveSkills.pdf

Education Endowment Foundation. (2013). Retrieved from: https://v1.educationendowmentfoundation.org.uk/uploads/pdf/Non-cognitive_skills_literature_review_1.pdf

Eisenberg, N., Smith, C.L., Sadovsky, A., Spinrad, T.L. (2004). Effortful control: Relations with emotion regulation, adjustment, and socialization in childhood. In Baumeister, R.F., Vohs, K.D., editors. *Handbook of self-regulation: Research, theory, and applications*. New York: Guilford Press. pp. 259–282.

Eklund, K., Dowdy, E., Jones, C., & Furlong, M. (2011). Applicability of the dual-factor model of mental health for college students. *Journal of College Student Psychotherapy*, *25*(1), 79-92.

Elliot, A. J., Dweck, C. S., & Yeager, D. S. (Eds.). (2017). *Handbook of competence and motivation: Theory and application*. Guilford Publications.

Emmons, R. A., &McCullough, M. E. (Eds.). (2003). *The psychology of gratitude*. New York: Oxford University Press.

Engel, G.L. (1977). The need for a new medical model: A challenge for biomedicine. *Science*, *196*, 129-136.

Erhart, M., Ottova, V., Gaspar, T., Jericek, H., Schnohr, C., Alikasifoglu, M., ... & Ravens-Sieberer, U. (2009). Measuring mental health and well-being of school-children in 15 European countries using the KIDSCREEN-10 Index. *International Journal of Public Health*, *54*(2), 160-166.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.

Ernst, J. L. R. (2015). *Capturing complete mental health among adolescents: Investigation of Covitality latent class typologies*. University of California, Santa Barbara.

European Pact for Mental Health and Wellbeing. (2008). Retrieved from: https://ec.europa.eu/health/sites/health/files/mental_health/docs/ev_20161006_co06_en.pdf

Evans, G.W., Schamberg, M.A. (2009). Childhood poverty, chronic stress, and adult working memory. *National Academy of Science, USA*, 106, 6545–6549. [PMC free article] [PubMed]

Fain, H. (2015). *Between philosophy and history: The resurrection of speculative philosophy of history within the analytic tradition*. Princeton University Press.

Farb, N.A., Segal, Z.V., Mayberg, H., Bean, J., McKeon, D., Fatima, Z. et al. (2007). Attending to the present: mindfulness meditation reveals distinct neural modes of self-reference. *Social Cognition and Affect in Neuroscience*, *2*(4), 313–322. [PMC free article] [PubMed]

Feder, A., Nestler, E.J., Charney, D.S. (2009). Psychobiology and molecular genetics of resilience. *National Review of Neuroscience*, *10*(6), 446–57. [PMC free article] [PubMed]

Fenwick, T. J. (2004). Discursive work for educational administrators: Tensions in negotiating partnerships. Discourse: *Studies in the Cultural Politics of Education*, *25*(2), 171-187.

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, Ill: Row, Peterson.

Filipovitch, A.J. (2005, March 11). Reframing organizations. Retrieved from krypton.mnsu.edu/~jp5985fj/courses/609/Frame/Reframing.html

Findlay, J.H. (Ed.). (1910). *Educational Essays*. London: Blackie and Son

Fischer, K.W., Bidell, T.R. (1998). Dynamic development of psychological structures in action and thought. In: Damon, W., Lerner, R.M., (Eds). *Handbook of Child Psychology*. Vol. 1. New York: Wiley. pp. 467–561. Theoretical models of human development.

Foucault, M. (1980). *Discipline and punish: The birth of the prison* (A. Sheridan, Trans.). New York: Vintage.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *The American Psychologist*, *56*(3), 218–226.

Fredrickson, B. L., & Joiner, T. (2018). Reflections on positive emotions and upward spirals. *Perspectives on Psychological Science*, *13*(2), 194-199.

Freeman, M., & Brockmeier, J. (2001). *Narrative integrity: Autobiographical identity and the meaning of the "good life."* In J. Brockmeier & D. Carbaugh (Eds.), *Narrative and identity* (pp. 75-99). Amsterdam, The Netherlands: John Benjamins.

Froh, J. J., Bono, G., & Emmons, R. A. (2010). Being grateful is beyond good manners: Gratitude and motivation to contribute to society among early adolescents. *Motivation and Emotion*, *34*(2), 144–157. doi:10.1007/ s11031-010-9163-z

Fullan, M. (2001). *Leading in a culture of change*. Hoboken, NJ: Jossey-Bass.

Fullan, M. (2003). *The moral imperative of school leadership*. Toronto: Ontario Principals'
Council.

Fullchange, A., & Furlong, M. J. (2016). An exploration of effects of bullying victimization from
a complete mental health perspective. *Sage Open*, (January-March), 1–12.
doi:10.1177/2158244015623593.

Fuller, J. B., Morrison, R., Jones, L., Bridger, D., & Brown, V. (1999). The effects of
psychological empowerment on transformational leadership and job satisfaction. *The
Journal of Social Psychology*, *139*(3), 389-391.

Furlong, M. J. (2015). Introduction to special issue school-based approaches to promote
complete mental health: School psychologists working to foster students' thriving well-
being.*Contemporary School Psychology, 12*(1), 231-232. doi:

https://link.springer.com/article/10.1007/s40688-015-0078-2

Furlong, M. J., Dowdy, E., Carnazzo, K., Bovery, B., & Kim, E. (2014). Covitality: Fostering the
building blocks of complete mental health. *NASP Communiqué*, (June issue). Retrieved
from: www.readperiodicals.com/201406/3346560221.html Social Emotional Health
Survey System Publications.

Furlong, M. J., Dowdy, E., Carnazzo, K., Bovery, B., & Kim, E. (2014**).** Covitality: Fostering
the building blocks of complete mental health. *NASP Communiqué*, (June issue). Also
available from www.readperiodicals.com/201406/3346560221.html

Furlong, M. J., Gilman, R., & Huebner, E. S. (Eds.). (2014). *Handbook of positive psychology in
schools* (2nd ed.). New York, NY: Taylor & Francis.

Furlong, M. J., O'Brennan, L. M., & You, S. (2011). Psychometric properties of the add health school connectedness scale for 18 sociocultural groups. *Psychology in the Schools*, *48*(10), 986-997.

Furlong, M. J., You, S., Renshaw, T. L., O'Malley, M. D., & Rebelez, J. (2013). Preliminary development of the Positive Experiences at School Scale for elementary school children. *Child Indicators Research*, 6, 753–775. doi: 10.1007/s12187-013-9193-7 (download)

Furlong, M. J., You, S., Renshaw, T. L., Smith, D. C., & O'Malley, M. D. (2014). Preliminary development and validation of the Social and Emotional Health Survey for secondary students. *Social Indicators Research*, *117*, 1011–1032. doi:10.1007/s11205-013-0373-0

Furlong, M. J., You, S., Renshaw, T. L., Smith, D. C., & O'Malley, M. D. (2013). Preliminary development and validation of the Social and Emotional Health Survey for secondary students. *Social Indicators Research*. Advanced online publication. doi:10.1007/s11205-0130373-0

Furlong, M. J., You, S., Shishim, M., & Dowdy, E. (2016). Development and validation of the Social Emotional Health Survey – Higher Education Version. *Applied Research in Quality of Life, 12*(2), 343-367. doi:10.1007/s11482-016-9464-9

Furlong, M. J., You, S., Shishim, M., & Dowdy, E. (2017). Development and validation of the social emotional health survey–higher education version. *Applied Research in Quality of Life*, *12*(2), 343-367.

Furlong, M. (nd.). *Submitted to NASP Communique Covitality: Fostering the Building Blocks of Complete Mental Health.* (Doctoral dissertation, University of California Santa Barbara).

Furlong, M., Froh, J., Muller, M., & Gonzalez, V. (2014). The role of student engagement in engaged living and psychological and social well-being: The centrality of

connectedness/relatedness. In D. J. Shernoff & J. Bempechat (Eds.), *National Society for the study of education yearbook—Engaging youth in schools: Empirically-based models to guide future innovations*. New York, NY: Columbia Teachers College. https://searchworks.stanford.edu/view/10572754

Furlong, M., You, S., Renshaw, T.L., Smith, D.C., & O'Malley, M.D. (2014). Preliminary development and validation of the Social and Emotional Health Survey for secondary students. *Social Indicators Research*. 117. 1011–1032. 10.1007/s11205-013-0373-0.

Garland, E. L., Gaylord, S. A., & Fredrickson, B. L. (2011). Positive reappraisal mediates the stress-reductive effects of mindfulness: An upward spiral process. *Mindfulness*, *2*(1), 59-67.

Gavelek, J.R., & Raphael, T.E. (1996). Changing talk about text: New roles for teachers and students. *Language Arts*, 73, 182-193.

Gee, J. (2002). Identity as an analytic lens for research in education. *Review of Research in Education*, *25* (2000-2001), 99–125.

Gee, J. P., Hull, G., & Lankshear, C. (1996). *The new work order: Behind the language of the new capitalism*. St. Leonards, NSW: Allen & Unwin.

Georgakopoulou, A. (2007). *Small stories, interaction, and identities*. Amsterdam, The Netherlands: John Benjamins.

Gerber, M. M., & Semmel, M. I. (1984). Teacher as imperfect test: Reconceptualizing the referral process. *Educational Psychologist*, *19*, 137– 148. doi:10.1080/00461528409529290

Gergen, K. J., & Gergen, M. M. (1983). The social construction of helping relationships. *New Directions in Helping*, *1*, 143-163.

Gergen, K.J. (1991). *The saturated self: Dilemmas of identity in contemporary life*. New York, NY: Basic Books.

Glaser, B. and Strauss, A. (1967). T*he discovery of grounded theory: Strategies for qualitative research*. New York: Aldine de Guyter.

Goldsmith, H.H., Pollak, S., Davidson, R.J. (2008). Developmental neuroscience perspectives on emotion regulation. *Child Development Perspectives, 2*(3), 132–140. [PMC free article] [PubMed]

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586. doi:10.1111/j.1469-7610.1997.tb01545.x

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist*, *58(6-7)*, 466–   474. doi:10.1037/0003-066X.58.6-7.466.

Greenberg, M.T., Rhoades, B.L. (2008). Foresight project: Mental capital and mental wellbeing, United Kingdom: Office of Science and Innovation. *State-of-Science Review*: Self regulation and executive function-What can teachers and schools do?

Gronn, P. (2000). Distributed properties: A new architecture for leadership. *Educational Management and Administration, 28*(3), 317–338.

Gronn, P. (2002) Distributed leadership as a unit of analysis. *Leadership Quarterly, 13*, 423–451.

Gronn, P. (2008). The future of distributed leadership. *Journal of Educational Administration, 46*(2), 141-158. doi: 10.1108/09578230810863235

Gutman, L.M., & Schoon, I. (2013). Education Endowment Foundation: Impact of non-cognitive skills on outcomes for young people. Retrieved from:

https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Lit_Review
_Non-CognitiveSkills.pdf

Hanson J,L., Chung, M.K., Avants, B.B., Shritcliff, E.A., Gee, J.C., Davidson, R.J., Pollak, S.D. (2010). Early stress is associated with alterations in the orbitofrontal cortex: A tensor-based morphometry investigation of brain structure and behavioral risk. *Journal of Neuroscience, 30*(22), 7466–7472.[PMC free article] [PubMed]

Hargreaves, A. (1998). The emotional politics of teaching and teacher development: With implications for educational leadership. *International Journal of Leadership in Education, 1*(4), 315-336.

Hargreaves, A., Day, C., Hopkins, D., Harris, A., Hadfield, M., & Chapman, C. (2003). *Effective leadership for school improvement*. Routhledge Falmer.

Harré, R., & Gillett, G. (1994). *The Discursive Mind*. London: Sage.

Harry, B., & Klingner, J. (2007). Ambiguity and subjectivity contribute to the disproportionate placement of minorities in special education.

Harry, B., & Klingner, J.K. (2007). Improving instruction for students with learning needs: Discarding the deficit model, *ASCD, 64*(5), 16-21.

Harry, B., & Klingner, J. K. (2006). *Why are so many minority students in special education? Understanding race and disability in schools*. New York: Teachers College Press.

Harter, S. (2006). *The self*. In: Damon, W., Lener, R.M., Eisenberg, N. (eds). *Handbook of Child Psychology*. 6. Vol. 3. New York: Wiley; pp. 505–570. Social, Emotional, and Personality Development.

Harter, S. (2007). *The Self*. Handbook of Child Psychology, III: 9.

Hartley, M. T. (2011). Examining the relationships between resilience, mental health, and academic persistence in undergraduate college students. *Journal of American College Health*, 59, 596–604.

Haslam, S. A. (2004). *Psychology in organizations: The social identity approach*, 2nd ed. London: Sage Publications.

Hassin, R.R., Bargh, J.A., Zimmerman, S. (2009). Automatic and flexible: The case of non-conscious goal pursuit. *Social Cognition, 27*, 20–36. [PMC free article] [PubMed]

Hastedt, C., Hicks, A., Wise, K. (2008, Feb 29). MaineCare costs: The real story behind the numbers. *Maine Center for Economic Policy*. Retrieved from: http://www.mecep.org/wp-content/uploads/2014/09/Choices-Maine-Care-2-29-2008.pdf

Hattie, J., Marsh, H.W., Neill, J., & Richards, G. (1997). Adventure education and outward bound: Out-of-class experiences that make a lasting difference. *Review of Educational Research*, *67*(1), 43087. Retrieved from: https://doi.org/10.3102/00346543067001043

Heckman, J.J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science, 312(5782)*, 1900–1902.

Heckman, J.J. (2007). The economics, technology and neuroscience of human capability formation. Proceedings of the National Academic of Sciences, 04, 13250–13255. [PMC free article][PubMed]

Heckman, J.J., Stixrud, J., Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. *Journal of Labor Economics, 24*(3), 411-482.

Heilig, J.V., Cole, H., Aguilar, A. (2010). From Dewey to No Child Left Behind: The evolution and devolution of public arts education. *Arts Education Policy Review, 111*(4), 136-145.

Hennissen, P., Beckers, H., & Moerkerke, G. (2017). Linking practice to theory in teacher education: A growth in cognitive structures. *Teaching and Teacher Education*, *63*, 314-325.

Henry, L. A., & Stahl, N. A. (2017). Dismantling the developmental education pipeline: Potent pedagogies and promising practices that address the college readiness gap. *Journal of Adolescent & Adult Literacy*, *60*(6), 611-616.

Henry, T., Svence, G., & Petrulite, A. (2016). Theoretical and practical study of the concept of social and emotional health by Michael J. Furlong applied to the selection of teenagers and youth. *Signum Temporis*, *8*(1), 67-75.

Hernstein, R., & Murray, C. (1994). *The bell curve: Intelligence and class structure in American life*. New York, NY: Free Press.

Hersey, P. and Blanchard, K. (n.d.). Hersey-Blanchard situational leadership theory. Retrieved from http://www.leadership-central.com/situational-leadership-theory.html#axzz2PVQLLYv0

Higgins, E.T. (1996). Knowledge activation: Accessibility, applicability, and salience. In: Higgins, E.T., Kruglanski, A.W., (eds). *Social Psychology: Handbook of basic principles*, pp. 133–168. New York: Guilford

Hixson, N., Ravitz J. & Whisman, A. (2012). Extended professional development in project-based learning: Impacts on 21st century teaching and student achievement. Charleston, WV: West Virginia Department of Education. Retrieved from https://www.academia.edu/1999374.

Hollon, S. D., & Beck, A. T. (1994). Cognitive and cognitive-behavioral therapies. In A. E.

    Bergin & S.L. Garfield (Eds.), *Handbook of psychotherapy and behavior change*, (pp.

    428—466). New York: Wiley.

Holt, M. K., Greif Green, J., Reid, G., DiMeo, A., Espelage, D. L., Felix, E. D., & ... Sharkey, J.

    D. (2014). Associations between past bullying experiences and psychosocial and

    academic functioning among college students. *Journal of American College Health*,

    62(8), 552-560.

Howard-Jones, P. A. (2014). Neuroscience and education: myths and messages. *Nature Reviews*

    Neuroscience, *15*(12), 817. Retrieved from:

    http://www.nasponline.org/publications/cq/42/8/covitality.aspx

Huang, T. C., Chen, C. C., & Chou, Y. W. (2016). Animating eco-education: To see, feel, and

    discover in an augmented reality-based experiential learning environment. *Computers &*

    Education, *96*, 72-82.

Huebner, E. S. (1991). Initial development of the student's life satisfaction scale. *School*

    Psychology International, 12(3), 231–240. doi:10. 1177/0143034391123010.

Huebner, E. S., & Gilman, R. (2003). Toward a focus on positive psychology in school

    psychology. *School Psychology Quarterly, 18(2)*, 99– 102.

    doi:10.1521/scpq.18.2.99.21862

Huebner, E. S., & Hills, K. J. (2011). Does the positive psychology movement have legs for

    children in Huebner, E. S., & Hills, K. J. (2011). Does the positive psychology movement

    have legs for children in schools? *Journal of Positive Psychology, 6*(1), 88–94.

    doi:10.1080/17439760.2010.5 36778

Huebner, E. S., Gilman, R., Reschly, A. L., & Hall, R. (2009). Positive schools. In S. J. Lopez & C. R. Synder (Eds.), *The Oxford handbook of positive psychology* (2nd ed., pp. 561–568). New York, NY: Oxford.

Hussey, D. (2006). Risk status and differential effectiveness of urban school-based mental health services. In C. Newman, C. Liberton, K. Kutash, & R. Friedman (Eds.), *The19th Annual Research Conference Proceedings: A system of care for children's mental health, expanding the research base (March 6 to March 9, 2005)* (pp. 219-221). Tampa, FL: The Louis de la Parte Florida Mental Health Institute, University of South Florida, Research and Training Center for Children's Mental Health.

IBM Corp. (2017). *IBM SPSS Statistics for Windows*, Version 25.0. Armonk, NY: IBM Corp.

Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of Psychiatric Research, 47*(3), 391–400.

Immordino-Yang, M. H. (2015). *Emotions, Learning, and the Brain: Exploring the Educational Implications of Affective Neuroscience (The Norton Series on the Social Neuroscience of Education)*. WW Norton & Company.

Ingels, S. J., Abraham, S. Y., Rasinski, K. A., Karr, R., Spencer, B. D., Frankel, M. R., & Owings, J. A. (1990). National Education Longitudinal Study of 1988 (NELS:88). Base year: Teacher component data file user's 21 manual (NCES 90-484). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Institute for the Future (IFTF). (2011). Future work skills: 2020. Retrieved from: http://www.iftf.org/futureworkskills/

Institute of Education Sciences. (n.d.). National Center for Education Statistics: Kennebec Valley

    Community College. Retrieved from:

    http://nces.ed.gov/collegenavigator/?s=ME&zc=04937&zd=0&of=3&l=3&ct=1&id=161

    192

International center for school based youth development. (2016). Retrieved from:

    http://www.michaelfurlong.info/icsbyd_2016-2017_annual_rep.pdf

International Center for School Based Youth Development. (2016). *Prevention and intervention*

    strategies. Retrieved from: http://www.project-covitality.a2hosted.com/prevention-and-

    intervention/

Ito, A., Smith, D. C., You, S., Shimoda, Y., & Furlong, M. J. (2015). Validation of the Social

    Emotional Health Survey–Secondary for Japanese Students. *Contemporary School*

    Psychology, 19(4), 243–252. doi:10.1007/s40688-015- 0068-4

Jennings, P.A., Greenberg, M. (2009). The prosocial classroom: Teacher social and emotional

    competence in relation to child and classroom outcomes. *Review of Educational*

    Research, 79(1), 491–525.

Jensen, A. R. (1998). *The g factor: The science of mental ability*. London, England: Praeger.

Jha, A.P., Krompinger, J., Baime, M.J. (2007). Mindfulness training modifies subsystems of

    attention. *Cognition, Affect, and Behavioral Neuroscience, 7*(2),109–119. [PubMed]

Jones, C. N. (2011). *Covitality: An exploration of integrated well-being in college students*.

    University of California, Santa Barbara.

Jones, C. N., You, S., & Furlong, M. J. (2013). A Preliminary examination of covitality as

    integrated well-being in college students. *Social Indicators Research, 111*(2), 511-526.

Jones, C., You, S., Furlong, M. (2012). A preliminary examination of covitality as integrated

    well-being in college students. *Social Indices Research*. Retrieved from:

    https://www.researchgate.net/publication/259487684_A_preliminary_examination_of_co

    vitality_as_integrated_well-being_in_college_students.

Judge, T., Locke, E., Durham, C., & Kluger, A. (1998). Dispositional effects on job satisfactions

    and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*,

    17-34

Judge, T.A., Bono, J.E., Ilies, R., Gerhardt, M.W. (2002). Personality and leadership: A

    qualitative and quantitative review. *Journal of Applied Psychology*, *87*(4), 765-780.

Juvova, A., Chudy,S., Neumeister, P., Plischje, J., & Kvintova, J. (2015). Reflection of

    constructivist theories in current educational practice. *Universal Journal of Educational*

    Research 3(5): 345-349, 2015 http://www.hrpub.org DOI: 10.13189/ujer.2015.030506.

    Retrieved from: http://www.hrpub.org/download/20150510/UJER6-19503275.pdf

Kabat-Zinn, J., Lipworth, L., Burney, R. (1985). The clinical use of mindfulness meditation for

    the self-regulation of chronic pain. *Journal of Behavioral Medicine*, *8*(2), 163–

    190. [PubMed]

Kalla, S. (2011). Correlational Study. Retrieved from

    Explorable.com: https://explorable.com/correlational-study.

Kamphaus, R. W., & Reynolds, C. R. (2007). BASC-2 Behavioral and Emotional Screening

    System. *Social and Emotional Health Survey manual*. Bloomington, MN: Pearson.

Kane, M.J., Brown, L.H., McVay, J.C., Silvia, P.J., Myin-Germeys, I., Kwapil, T.R. (2007). For

    whom the mind wanders, and when: an experience-sampling study of working memory

    and executive control in daily life. *Psychological Sciences, 18*(14), 614–621. [PubMed]

Kant, Immanuel. (Translated by T.K. Abbott). (1988). *Fundamental principles of the metaphysics of morals*. Amherst, NY.: Prometheus Books.

Kaplan, Y. (2017). School–specific subjective wellbeing and emotional problems among high school adolescents. *Journal of Positive Psychology and Wellbeing*, *1*(1), 1-9.

Kasperson, C. (1982). Locus of control and job dissatisfaction. *Psychological Reports*, *50*, 823-826.

Kauffman, J. M., Hallahan, D. P., & Pullen, P. C. (2017). *Handbook of special education*. Routledge.

Kauffman, J. M., Hallahan, D. P., Pullen, P. C., & Badar, J. (2018). *Special education: What it is and why we need it*. Routledge.

Kennebec Valley Community College (KVCC). (2016). KVCC 2020 Strategic Plan. Kennebec Valley Community College: Maine.

Kennebec Valley Community College (KVCC). (n.d.). Kennebec Valley Community College. Retrieved from: www.kvcc.me.edu

Keyes, C. L. (2006). Mental health in adolescence: Is America's youth flourishing? *American Journal of Orthopsychiatry*, *76*(3), 395-402.

Keyes, C. L. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *American Psychologist*, *62*(2), 95.

Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*, 207–222. http://www.jstor.org/stable/3090197.

Keyes, C. L. M. (2005). Mental illness and/or mental health? Investigating axioms of the

complete state model of health. *Journal of Consulting and Clinical Psychology, 73*(3),

539–   548. doi:10.1037/0022-006X.73.3.539

Keyes, C. L.M. (2009). Brief description of the Mental Health Continuum–Short Form (MHC-

SF). Available: www.sociology.emory.edu/ckeyes/.

Keyfitz, L., Lumley, M. N., Hennig, K. H., & Dozois, D. J. A. (2013). The role of positive

schemas in child psychopathology and resilience. *Cognitive Therapy and

Research*, *37*(1), 97-108.

Kia-Keating, M., Dowdy, E., Morgan, M. L., & Noam, G. G. (2011). Protecting and promoting:

An integrative conceptual model for healthy development of adolescents. *Journal of

Adolescent Health*, *48*(3), 220-228.

Kidder, R. (2012, Mar.). 4th ICAC Symposium, 15 - 17 December 2009. Hong Kong. Retrieved

from http://www.youtube.com/watch?v=LkLk2yMoxvM.

Kielty, M., Gilligan, T., Staton, R., & Curtis, N. (2017). Cultivating mindfulness with third grade

students via classroom-based interventions. *Contemporary School Psychology*, *21*(4),

317-322.

Kihlstrom, J.F., Cantor, N. (2000). Social Intelligence. Retrieved from: http://ist-

socrates.berkeley.edu/~kihlstrm/social_intelligence.htm

Kim, E. K., Furlong, M. J., Dowdy, E., & Felix, E. D. (2014). Exploring the relative

contributions of the strength and distress components of dual-factor complete mental

health screening. *Canadian Journal of School Psychology*, *29*(2), 127-140.

Kim, E. K., Furlong, M. J., Zi, J. N., & Huebner, E. S. (in press). *Child well-being.* In S. Hart & B. Nastasi (Eds.), *International handbook on child rights in school psychology.* New York, NY. Springer.

Kim, E., Dowdy, E., & Furlong, M. J. (2014). An exploration of using a dual-factor model in school-based mental health screening. *Canadian Journal of School Psychology, 29*(2), 127–140. doi:10.1177/0829573514529567.

Kirschman, K. J. B., Johnson, R. J., Bender, J. A., & Roberts, M. C. (2009). Positive psychology for children and adolescents: Development, prevention, and promotion. In S. J. Lopez & C. R. Snyder (Eds.), *The Oxford handbook of positive psychology* (2nd ed., pp. 133–148). New York, NY: Oxford.

Klingberg, T. (2010). Training and plasticity of working memory. *Trends in Cognitive Science*, *14*(7), 317–24.[PubMed]

Klinger, J. K. (2007). *Teaching Reading Comprehension to students with Learning Difficulties*.

Klinger, J. K., & Edwards, P. (2006). Cultural considerations with response-to-intervention models. *Reading Research Quarterly, 41*, 108–117.

Knudsen, E.I., Heckman, J.J., Cameron, J.L., Shonkoff, J.P. (2006). Economic, neurobiological, and behavioral perspectives on building America's future workforce. *Proc National Academy of Science.* USA 103:10155–10162.

Kohlberg, L. (1958). The Development of Modes of Thinking and Choices in Years 10 to 16. *Ph. D. Dissertation*, University of Chicago.

Kohlberg, L. (1984). *The psychology of moral development: The nature and validity of moral stages (Essays on Moral Development, Volume 2)*. Harper & Row

Komarraju, M., & Nadler, D. (2013). Self-efficacy and academic achievement: Why do implicit beliefs, goals, and effort regulation matter?. *Learning and Individual Differences*, *25*, 67-72.

Komarraju, M., Ramsey, A., & Rinella, V. (2013). Cognitive and non-cognitive predictors of college readiness and performance: Role of academic discipline. *Learning and Individual Differences*, *24*, 103-109.

Kotter, J. (2008, September 8). The Importance of Urgency. [Video File]. Retrieved from https://youtu.be/zD8xKv2ur_s

Kotter, J. (2012*). Leading change*. Boston: Harvard Business School Press.

Kouzes, J.M. and Posner, B.Z. (n.d.). The five practices of exemplary leadership. In Business leadership (pp. 73-84). Retrieved from https://elearn.une.edu/bbcswebdav/courses/90261-201701-EDU-805-A1/EDU%20805%20Week%20Three%20-%20Five%20Practices%20of%20Exemplary%20Leadership.pdf

Krauss, S. E. (2005). Research paradigms and meaning making: A primer. *The Qualitative Report*, *10*(4), 758-770. Retrieved from http://nsuworks.nova.edu/tqr/vol10/iss4/7

KVCC. (2017). Fact Book. Retrieved from: http://www.kvcc.me.edu/CMSContent/Departments/Institutional_Assessment/Annual-Fact-Book_2015-2016.pdf

KVCC. (n.d.) Institutional assessment: Envision the future. Retrieved from: http://www.kvcc.me.edu/CMSContent/Departments/Institutional_Assessment/KVCC%20Envision%20the%20Future%20THE%20FINAL.doc

Kyllonen, P. (2005). ETS. R & D Connections: The case for noncognitive assessments. Retrieved from: https://www.ets.org/Media/Research/pdf/RD_Connections3.pdf

Kyllonen, P.C. (2012). Measurement of 21st century skills within the common core state standards. Educational Testing Service. Retrieved from: https://www.ets.org/Media/Research/pdf/session5-kyllonen-paper-tea2012.pdf

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist*, 55, 170–183. doi:10.1037/0003-066X.55.1.170

Laurent, J., Catanzaro, S. J., Joiner, T., Jr., Rudolph, K. D., Potter, K. I., Lambert, S., … Gathright, T. (1999). A measure of positive and negative affect for children: Scale development and preliminary validation. *Psychological Assessment, 11*(3), 326–338. doi:10.1037//1040-3590.11.3.326

Lawson, A. E., Banks, D. L., & Logvin, M. (2007). Self-efficacy, reasoning ability, and achievement in college biology. *Journal of Research in Science Teaching: The Official Journal of the National Association for Research in Science Teaching*, *44*(5), 706-724.

Lawson, T. J., Bodle, J. H., & McDonough, T. A. (2007). Techniques for increasing student learning from educational videos: Notes versus guiding questions. *Teaching of Psychology*, *34*(2), 90-93.

Lawson, V. (2007). Geographies of care and responsibility. *Annals of the Association of American Geographers*, *97*(1), 1-11.

Leder, G. (2017). Know thyself? Questioning the theoretical foundations of cognitive behavioral therapy. *Review of Philosophy and Psychology*, *8*(2), 391-410.

Lee, S. Y., & Strøm, I. D. F. R. G. (2014). Covitality: a synergistic conception of adolescents' mental health. In Renshaw, T., Furlong, M.J., Dowdy, E., Rebelez, J, Smith, D.C., and O'Malley. In *handbook of positive psychology in schools*. (pp. 20- 40). Routledge.

Legrand, D., & Ruby, P. (2009). What is self-specific? Theoretical investigation and critical

    review of neuroimaging results. *Psychological Review*, *116*(1), 252-282.

Leiber, S., Klimecki, O., Singer, T. (2011). Short-term compassion training increases prosocial

    behavior in a newly developed prosocial game. *PLoS One*. 6(3):e17798. [PMC free

    article] [PubMed]

Lenzi, M., Furlong, M. J., Dowdy, E., Sharkey, J. D., Gini, G., & Altoè, G. (2015). The quantity

    and variety across domains of psychological and social assets associated with school

    victimization. *Psychology of Violence, 5*(4), 411–421. doi:10.1037/a0039696.

Lerner, R. M., Dowling, E. M., & Anderson, P. M. (2003). Positive youth development: Thriving

    as a basis of personhood and civil society. *Applied Developmental Science*, 7, 172–180.

    doi.org/10.1002/yd.14

Levi, U., Einav, M., Raskind, I., Ziv, O., & Margalit, M. (2013). Helping students with LD to

    succeed: The role of teachers' hope, sense of coherence and specific self-

    efficacy. *European Journal of Special Needs Education*, *28*(4), 427-439.

Levy, F., & Murnane, R. J. (2004). Education and the changing job market. *Educational

    Leadership*, *62*(2), 80.

Lewis, M., Carmody, D.P. (2008). Self-representation and brain development. *Developmental

    Psychology, 44*(5), 1329–1334. [PubMed]

Lewis, R.E., Winkelman, P. (2017). *Lifescaping practices in school communities: Implementing

    action research and appreciative inquiry*. New York. Routledge.

Lifton, R.J. (1993). *The Protean self: Human resilience in an age of fragmentation*. New York,

    NY: Basic Books.

Locke, E.A. (1983). The nature and causes of job satisfaction. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297-1349). NY Wiley.

Long, R. F., Huebner, E. S., Wedell, D. H., & Hills, K. J. (2012). Measuring school-related subjective well-being in adolescents. *American Journal of Orthopsychiatry, 82*(1), 50–60. doi:10.1111/j.1939-0025.2011.01130.x

Lupien, S.J., McEwen, B.S., Gunnar, M.R., Heim, C. (2009). Effects of stress throughout the lifespan on the brain, behaviour and cognition. *National Review of Neuroscience*, *10*(6), 434–445. [PubMed]

Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology*, *60*(3), 541–572. doi: 10.1111/j.1744-6570.2007.00083.x.

Lutz, A., Brefczynski-Lewis, J.A., Johnstone, T., Davidson, R.J. (2008). Regulation of the neural circuitry of emotion by compassion meditation: Effects of meditative expertise. *PLoS ONE*. 3(3):e1897.[PMC free article] [PubMed]

Lutz, A., Slagter, H., Rawling, N., Francis, A., Greischar, L.L., Davidson, R.J. (2009). Mental training enhances attentional stability: Neural and behavioral evidence. *Journal of Neuroscience*, *29*(42),13418– 13427. [PMC free article] [PubMed]

Lutz, A., Slagter, H.A., Dunne, J., Davidson, R.J. (2008). Attention regulation and monitoring in meditation. *Trends in Cognitive Sciences, 12*(4), 163–169. [PMC free article] [PubMed]

MacDonald, G.B., & Validivieso, R. (2000). *Measuring deficits and assets: How we track youth development now, and how we should track it*. Washington, DC: Academy for Educational Development, Center for Youth Development and Policy Research.

MacFadden, R. (2013). Neuroscience and intervention. Retrieved from:

   https://slideplayer.com/slide/6223933/

MacFadden, R. (2016). Neuroscience and social work practice. Retrieved from:

   https://slideplayer.com/slide/12880609/

Magaletta, P., & Oliver, J.M. (1999). The hope construct, will, and ways. Their relations with

   self-efficacy, optimism, and general well-being. *Journal of Clinical Psychology*, *55*, 539-

   551. Retrieved from: https://onlinelibrary.wiley.com/doi/pdf/10.1002/%28SICI%291097-

   4679%28199905%2955%3A5%3C539%3A%3AAID-JCLP2%3E3.0.CO%3B2-G

Magyar-Moe, J. L. (2015). Positive psychology in the classroom. *Positive psychology on the*

   college campus, 55, 133-166.

Maier, S. & Seligman (2016). Learned helplessness at fifty: Insights from neuroscience.

   Psychological Review, 123(4), 349-367. Doi: 1037/rev0000033

Maine Community College System (MCCS). (2007). Program evaluation report. Retrieved from:

   https://www.mccs.me.edu/wp-content/uploads/MCCS-2017-GEA-Program-Evaluation-

   Report-FINAL.pdf

Maine Community College System (MCCS). (2016-2020). Strategic Plan. Retrieved from:

   http://www.kvcc.me.edu/CMSContent/Departments/Institutional_Assessment/MCCS-

   Strategic-Plan-2016-2020.pdf

Maine Educational Opportunity Association. (2016). Retrieved from:

   http://www.meeoa.org/talkingpoints.php

Mandler, J. M. (1984). *Stories, scripts, and scenes: Aspects of schema theory*. Hillsdale, NJ:

   Lawrence Erlbaum Associates.

Mangels, J. A., Butterfield, B., Lamb, J., Good, C., Dweck, C. (2006). Why do beliefs about intelligence influence learning success? A social cognitive neuroscience model. *Social Cognitive and Affective Neuroscience*, 1(2), 75–86.

Manyika, J., Lund, S., Auguste, B., Mendonca, L., Welsh, T., & Ramaswamy, S. (2011). An economy that works: Job creation and America's future. Retrieved from the McKinsey Global Institute website: http://www.mckinsey.com/Insights/MGI/Research/Labor_Markets/An_economy_that_w orks_f or_US_job_creation

Martin, R. E., & Ochsner, K. N. (2016). The neuroscience of emotion regulation development: implications for education. *Current Opinion in Behavioral Sciences*, *10*, 142-148.

Martin, Rebecca A. (2016). University of New England: Educational Leadership. Unpublished papers.

Martin, Rebecca. (2010). Research Methods. Unpublished Paper. Goddard College.

Martin, Rebecca. (2017). University of New England: Educational Leadership. Unpublished papers.

Masten, A. S., Cutuli, J. J., Herbers, J. E., & Reed, M. G. (2009). Resilience in development. In S. J. Lopez & C. R. Snyder (Eds.), *The Oxford handbook of positive psychology* (2nd ed., pp. 117–132). New York, NY: Oxford.

McAdams, D.P. (1993). *Stories we live by: Personal myths and the making of the self.* New York, NY: William Morrow.

McConnell, A. (2010). *Understanding policy success: Rethinking public policy*. Macmillan International Higher Education.

McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82*, 112–127.

McLean, K.C., Pasupathi, M., & Pals, J.L. (2007). Selves creating stories creating selves: A process model of narrative self-development in adolescence and adulthood. *Personality and Social Psychology Review, 11*, 262–278.

McVee, M. B., Dunsmore, K., & Gavelek, J. R. (2005). Schema theory revisited. *Review of Educational Research*, *75*(4), 531-566.

Mead, G. H. (1934). *Mind, self and society* (Vol. 111). University of Chicago Press.: Chicago.

Meindl, J.R. (1995). The romance of leadership as a follower-centric theory: A social constructionist approach. *Leadership Quarterly,* 6(3), 329–341.

Meltzer, L. (Ed.). (2018). *Executive function in education: From theory to practice*. Guilford Publications.

Merrill, B., West, L., Alheit, P., Bron, A. and Siig Andersen, A. (eds.). (2007). *Using biographies and life history approaches in the study of adult and lifelong learning*. Frankfurt-am- Main: Peter Lang.

Mertens, D. M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage publications.

Micari, M., & Pazos, P. (2012). Connecting to the professor: Impact of the student-faculty relationship in a highly challenging course. *College Teaching, 60*(2), 41-47.

Miley, W. M., & Spinella, M. (2006). Correlations among measures of executive function and positive psychological attributes in college students. *The Journal of General Psychology*, *133*(2), 175-182.

Miller, B. A. (2016). *Assessing organizational performance in higher education*. John Wiley & Sons.

Mind and Life Education Research Network (MLERN). (2012). Contemplative Practices and Mental Training: Prospects for American Education. *Child Development Perspectives*, *6*(2), 146–153. Retrieved from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3420012/

Moffitt, T.E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R.J., Harrington, H., Houts, R., Poulton, R., Roberts, B.W., Ross, S., Sears, M.R., Thomson, W.M., Caspi, A. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Science, USA, 108*(7), 2693–8.[PMC free article] [PubMed]

Moll, L. (Ed.). (1990). *Vygotsky and education: Instructional implications and applications of sociohistorical psychology*. Cambridge, England: Cambridge University Press.

Moore, S. A., Widales-Benitez, O., Carnazzo, K. W., Kim, E. K., Moffa, K., & Dowdy, E. (2015). Conducting universal complete mental health screening via student self-report. *Contemporary School Psychology, 19*(4), 253–267. doi:10.1007/s40688-015-0062-x

Moore, S., Dowdy, E., & Furlong, M. J. (2017). Using the Depression, Anxiety, Stress Scales–21 with U.S. adolescents: An alternate models analysis. *Journal of Psychoeducational Assessment, 35*, 581– 598. http://jpa.sagepub.com/content/early/2016/05/28/0734282916651537.abstract Social Emotional Health Survey System Publications

Murnane, R. J., Willett, J. B., & Levy, F. (1995). The growing importance of cognitive skills in wage determination. *The Review of Economics and Statistics, 77*(2), 251–266. National Research Council. (2008). Research on future skill demands: A workshop summary. Washington, DC: The National Academies Press.

Murnane, R. J., Willett, J. B., Duhaldeborde, Y., & Tyler, J. H. (2000). How important are the cognitive skills of teenagers in predicting subsequent earnings? *Journal of Policy Analysis and Management, 19*(4), 547–568.

Murnane, R. J., Willett, J. B., Duhaldeborde, Y., Tyler, J. H. (2000). How important are the cognitive skills of teenagers in predicting subsequent earnings? *Journal of Policy Analysis Management*, *19*, 547-568. doi:10.1002/1520-6688(200023)19:4<547::AID-PAM2>3.0.CO;2-#

National Association of School Psychologists. (2012). Position statement: Child rights. Bethesda, MD: Author. Retrieved from:

http://www.nasponline.org/about_nasp/positionpapers/ChildRights.pdf

National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research. (1979). The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research. http://tiny.cc/ rbdq8

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. National Research Act. (1974). Retrieved from:

https://bioethicsarchive.georgetown.edu/pcbe/reports/past_commissions/

National Research Council. (2002). Knowing what students know: *The science and design of educational assessment*. Committee on the Foundations of Assessment. J. Pellegrino, N.

Chudowsky, and R. Glaser, Eds. Center for Education. Division of Behavioral and Social
Sciences and Education. Washington, DC: National Academy Press.

National Research Council. (2010). Exploring the intersection of science education and 21st
century skills: A workshop summary. Washington, DC: The National Academies Press.

National Research Council. (2011). Assessing 21st century skills: Summary of a workshop.
Washington, DC: The National Academies Press. Retrieved from:
http://ctl.sri.com/publications/downloads/21st_century_skills.pdf

National Research Council. (2012). Education for life and work: Developing transferable
knowledge and skills in the 21st century. Washington, DC: The National Academies
Press.

Neff, K. (2017). Self-Compassion. Retrieved from: http://self-compassion.org/wp-
content/uploads/2017/09/Neff.Knox2017.pdf

Neill, J.T. & Richards, G.E., & Badenoch, D. (1997). *A research evaluation of short-term
camps for youth at risk.* Canberra, ACT, Australia: National Outdoor Education &
Leadership Services.

Neill, J.T., Marsh, H.W., & Richards, G.E. (1997). *The Life Effectiveness Questionnaire:
Development and Psychometrics.* Sydney, NSW, Australia: The University of Western
Sydney.

New World of Work (NWoW). (2014). Community colleges and 21st century skills: Skills panels
to assist student career success. Retrieved from: https://www.newworldofwork.org/wp-
content/uploads/2016/10/New-World-of-Work-Skills-Panel-Report-April-2014.pdf

Nickerson, A. B. (2007). The use and importance of strength-based assessment. School

   Psychology Forum: *Research in Practice, 2*, 15–25. Retrieved from

   http://www.nasponline.org/publications/spf/abstract.aspx?ID=2041

Nieto, S. (2005). Public education in the twentieth century and beyond: High hopes, broken

   promises, and an uncertain future. *Harvard Educational Review*, 75(1), 43-64.

Nieto, S. (2009). From surviving to thriving. *Educational Leadership*, 66(5), 8-13.

Noddings, N., (Ed.). *Educating citizens for global awareness*. New York: Teachers' College

   Press; 2005.

Noftle, E. E., & Robins, R. (2007). Personality predictors of academic outcomes: Big five

   correlates of GPA and SAT scores. *Journal of Personality and Social Psychology, 93,*

   116–130.

Norrish, J. M., & Vella-Brodrick, D. A. (2009). Positive psychology and adolescents: Where are

   we now? Where to from here?. *Australian Psychologist*, *44*(4), 270-278.

Novais, G. & Gallaher, L. (2010). ITL Research Technical Memo. Retrieved from

   http://itlresearch.com/images/stories/reports/ITL%20technical%20memo%2012%20Dec

   %202010.pdf

Nunnally, J. C. (1978). Psychometric theory. New York: McGraw-Hill.

O'Connell, M.E., Boat, T., Warner, K.E., (Eds.). (2009). *Preventing mental, emotional, and*

   behavioral disorders among young people: Progress and possibilities. Washington DC:

   The National Academies Press.

Oishi, S., & Diener, E. (2014). Can and should happiness be a policy goal? *Policy Insights from*

   the Behavioral and Brain Sciences, *1*(1), 195-203.

Osher, D., Kidron, Y., Brackett, M., Dymnicki, A., Jones, S., & Weissberg, R. P. (2016). Advancing the science and practice of social and emotional learning: Looking back and moving forward. *Review of Research in Education*, *40*(1), 644-681.

Park, N., & Peterson, C. (2008). Positive psychology and character strengths: Application to strengths-based school counseling. *Professional School Counseling*, *12*(2), 85-92.

Park, N., Peterson, C., & Seligman, M. E. (2004). Strengths of character and well-being. *Journal of Social and Clinical Psychology*, *23*(5), 603-619.

Partnership for 21st Century Skills. (2002). Framework for 21st century learning. Retrieved from http://www.p21.org/overview/skills-framework

Partnership for 21st Century Skills. P21. (2009). Retrieved from: http://www.p21.org/index.php?option=com_content&view=article&id=800&Itemid=52

Partnership for 21st Century Skills. (2002). Retrieved from: http://www.p21.org/about-us/our-history.

Partnership for 21st Century Skills. (2011). Retrieved from: http://www.p21.org/

Paterson, A. T., Luthans, F., & Jeung, W. (2013). Thriving at work: Impact of psychological capital and supervisor support. *Journal of Organizational Behavior*, *35*, 434-446. https://doi.org/10.1002/job.1907

Pellerone, M., Iacolino, C., Mannino, G., Formica, I., & Zabbara, S. M. (2017). The influence of parenting on maladaptive cognitive schema: a cross-sectional research on a group of adults. *Psychology Research and Behavior Management*, *10*, 47.

Pescosolido, B. (2013). The public stigma of mental illness: What do we think; What do we know; What can we prove? *Journal of Health and Social Behavior*, *54*(1), 1–21. http://doi.org/10.1177/0022146512471197

Peterson, C. & Seligman, M.E.P. (2004) *Character strengths and virtues: a handbook and classification.* (New York, Oxford University Press/Washington, DC, American Psychological Association).

Peterson, C. (2006). *A primer in positive psychology*. Oxford University Press.

Peterson, C., & Park, N. (2003). Positive psychology as the evenhanded positive psychologist views it. *Psychological Inquiry*, *14*(2), 143-147.

Peterson, C., & Seligman, M. E. P. (2004). Character Strengths and Virtues: A Handbook and Classification. New York, NY: Oxford University Press.

Peterson, C., Park, N., & Seligman, M. E. (2005). Orientations to happiness and life satisfaction: The full life versus the empty life. *Journal of Happiness Studies*, *6*(1), 25-41.

Peterson, C., Park, N., & Sweeney, P. J. (2008). Group well-being: morale from a positive psychology perspective. *Applied Psychology*, *57*, 19-36.

Pfeiffer, S.I. & Reddy, L.A. (1998) School-based mental health programs in the United States: present status and a blueprint for the future, *School Psychology Review,* 27, 84–86.

Piaget, J. (1936). *Origins of intelligence in the child.* London: Routledge & Kegan Paul.

Piaget, J. (1957). *Construction of reality in the child.* London: Routledge & Kegan Paul.

Piaget, J. (2001). Robert L. Campbell, Ed. *Studies in reflection abstraction*. Sussex: Psychology Press. ISBN 1-84169-157-7.

Pierce, S., Gould, D., & Camiré, M. (2017). Definition and model of life skills transfer. *International Review of Sport and Exercise Psychology*, *10*(1), 186-211.

Pluye, P., & Hong, Q. N. (2014). Combining the power of stories and the power of numbers: mixed methods research and mixed studies reviews. *Annual Review of Public Health*, *35*, 29-45.

Polkinghorne, D. (1995). Narrative configuration in qualitative analysis. *International Journal of Qualitative Studies in Education, 8*(1), 5–23.

Polkinghorne, D. E. (1988). *Narrative knowing and the human sciences*. Suny Press.

Pornari, C. D., & Wood, J. (2010). Peer and cyber aggression in secondary school students: The role of moral disengagement, hostile attribution bias, and outcome expectancies. *Aggressive Behavior: Official Journal of the International Society for Research on Aggression*, *36*(2), 81-94.

Poropat, A. E. (2009). A meta-analysis of the five-factor model of personality and academic performance. *Psychological Bulletin*, *135*(2), 322.

Positive Psychology Institute. (2012). Retrieved from:

http://www.positivepsychologyinstitute.com.au/what_is_positive_psychology.html

Positive Psychology. (2018). University of Pennsylvania. Retrieved from:

https://ppc.sas.upenn.edu/

Purdy, J., & Walker, J. (2012). Liminal spaces and research identity. *Pedagogy: Critical approaches to teaching literature, language, composition, and culture*, *13*, 1. Retrieved from: http://www.leetorda.com/uploads/2/3/2/5/23256940/84686335.pdf

Pursuit of Happiness. (2016). Retrieved from: http://www.pursuit-of-happiness.org/teaching-resources/

Pye, A. (2005). Leadership and organizing: Sensemaking in action. *Leadership, 1*(1), 31– 50.

Rajbhandari, M. S., & Rajbhandari, S. (2015). Leadership maintenance: Filling the gap for leadership competences. *Educational Research and Reviews, 10*(21), 2777-2788.

Rand, K. (2009). Hope and optimism: Latent structures and influences on grade expectancy and academic performance. *Journal of Personality, 77*(1), 231-260.

Rattansi, A., & Phoenix, A. (2005). Rethinking youth identities: Modernist and postmodernist frameworks. *Identity: An International Journal of Theory and Research, 5*, 97-123.

Reddy, I. R. (2007). Undergraduate psychiatry education: Present scenario in India. *Indian Journal of Psychiatry*, *49*(3), 157.

Reichard, J. R., Avey, B. J., Lopez, S., & Dollwet, M. (2013). Having the will and finding the way: A Review and meta-analysis of hope at work. *The Journal of Positive Psychology, 8*, 292-304. https://doi.org/10.1080/17439760.2013.800903

Renshaw, T. L., & Bolognino, S. J. (2016). The College Student Subjective Wellbeing Questionnaire: A brief, multidimensional measure of undergraduate's covitality. *Journal of Happiness Studies*, *17*(2), 463-484.

Renshaw, T. L., Furlong, M. J., Dowdy, E., Rebelez, J., Smith, D. C., O'Malley, … Strom, I. F. (2014). Covitality: A synergistic conception of adolescents' mental health**.** In M. J. Furlong, R. Gilman, & E. S. Huebner (Eds.), *Handbook of positive psychology in the schools* (2nd ed., pp. 12–32). New York, NY: Routledge/Taylor & Francis.

Research-Based Practice. (n.d.). Retrieved from:
   http://www.nasponline.org/publications/cq/42/8/covitality.aspx

Resnick, L., Levine, J., & Teasley, S. (1991). *Perspectives on social shared cognition*. Washington, DC: American Psychological Association.

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., ... & Ireland, M. (1997). Protecting adolescents from harm: findings from the National Longitudinal Study on Adolescent Health. *Jama*, *278*(10), 823-832.

Reusser, K. (2001). Co-constructivism in educational theory and practice. *International Encyclopedia of the Social and Behavioral Sciences*. Retrieved from:

https://www.ife.uzh.ch/dam/jcr:00000000-3212-6146-0000-00004ae1a3f6/Co_Constructivism.pdf

Rice, M., Kang, D. H., Weaver, M., & Howell, C. C. (2008). Relationship of anger, stress, and coping with school connectedness in fourth-grade children. *Journal of School Health*, *78*(3), 149-156.

Rice, R.W., Gentile, D.A., & McFarlin, D.B. (1991). Facet importance and job satisfaction. *Journal of Applied Psychology, 76*(1), 31-39.

Richards, G. E , Ellis, L. A., & Neill, J. T. (2002). The ROPELOC: Review of Personal Effectiveness and Locus of Control: A comprehensive instrument for reviewing life effectiveness. Paper presented at Self-Concept Research: Driving International Research Agendas, 6-8 August, Sydney. [.pdf] Retrieved from: http://www.wilderdom.com/tools/leq/ROPELOC.html

Richards, G.E., Ellis, L. & Neill, J.T. (2002) *The ROPELOC: Review of Personal Effectiveness and Locus of Control: A comprehensive instrument for reviewing life effectiveness.* Self-Concept research: Driving International research Agendas. Proceedings of the 2nd International Biennial Conference. University of Western Sydney, Australia. Aug 6-8, 2002.

Riggio, R. (2013, November 14). Transformational Leadership. [Video file]. Retrieved from: https://www.youtube.com/watch?v=ZvezV2Zhihg.

Robbins, S., Allen, J., & Sawyer, R. (2005). The role of psychosocial factors in promoting students' success in college. Unpublished manuscript, ACT, Iowa City, IA.

Robbins, S., Allen, J., Casillas, A., and Peterson, C.H. (2006). Unraveling the differential effects of standardized achievement and psychosocial predictors of college outcomes: A

prospective study. *Journal of Educational Psychology*. Retrieved from:

https://www.researchgate.net/publication/264001670_Unraveling_the_differential_effect

s_of_standardized_achievement_and_psychosocial_predictors_of_college_outcomes_A_

prospective_study.

Robbins, S., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do

psychosocial and study skill factors predict college outcomes? A meta-analysis.

Psychological Bulletin, *130*(2), 261–288.

Robbins, S., Le, H., & Lauver, K. (2005). Promoting successful college outcomes for all

students: Reply to Weissberg and Owen (2005). *Psychological Bulletin, 131*(3), 410–411.

Robertson, I. T., Cooper, C. L., Sarkar, M., & Curran, T. (2015). Resilience training in the

workplace from 2003 to 2014: A systematic review. *Journal of Occupational and

Organizational Psychology*, *88*(3), 533-562.

Robertson, S. I. (2016). *Problem solving: Perspectives from cognition and neuroscience*.

Psychology Press.

Robitschek, C., & Keyes, C. L. M. (2009). Keyes's model of mental health with personal growth

initiative as a parsimonious predictor. *Journal of Counseling Psychology*, *56*(2), 321–

329. doi:10.1037/a0013954.

Roeser, R.W., Peck, S.C. (2009). An education in awareness: Self, motivation, and self-regulated

learning in contemplative perspective. *Educational Psychologist, 44*(2), 119–136.

[PMC free article][PubMed].

Rogers, C. (2012). Inclusive education, exclusion and difficult difference: A call for

humanity. *British Journal of Sociology of Education, 33*(3), 475-485.

Rood, l., Roelofs, J., Bögels, S.M., Nolen-Hoeksema, S., Schouten, E. (2009). The influence of emotion-focused rumination and distraction on depressive symptoms in non-clinical youth: A meta-analytic review. *Clinical Psychology Review, 29*(7), 607-616. ISSN 0272-7358, https://doi.org/10.1016/j.cpr.2009.07.001.

Ross, W.D. (trans). (n.d.) Nicomachean Ethics by Aristotle 350 BC. Retrieved from http://virtuescience.com/nicomachean-ethics.html.

Rostosky, S. S., Owens, G. P., Zimmerman, R. S., & Riggle, E. D. (2003). Associations among sexual attraction status, school belonging, and alcohol and marijuana use in rural high school students. *Journal of Adolescence*, *26*(6), 741-751.

Roth, W. M., & Tobin, K. (Eds.). (2007). *Science, learning, identity: Sociocultural and cultural historical perspectives*. Rotterdam: Sense.

Rotter, J. (1954). *Social learning & clinical psychology*. NY: Prentice-Hall.

Rumelhart, D.E. (1980) Schemata: the building blocks of cognition. In: R.J. Spiro et al. (Eds) *Theoretical Issues in Reading Comprehension*, Hillsdale, NJ: Lawrence Erlbaum.

Saaty, T. L. (2001). *Decision making for leaders: The analytic hierarchy process for decisions in a complex world*. Rws Pubns.

Salkind, N. J. (2014). *Statistics for people who (think they) hate statistics*. Fifth edition. Thousand Oaks, CA: SAGE Publications, Inc.

Sandel, Michael. (n.d.). Harvard University. Episode 6: Mind Your Motive. Retrieved from https://www.youtube.com/watch?v=8rv-4aUbZxQ.

Sawtelle, V., Brewe, E., Goertzen, R. M., & Kramer, L. H. (2012). Identifying events that impact self-efficacy in physics learning. *Physical Review Special Topics-Physics Education Research*, *8*(2), 020111.

Scales, P. C. (1999). Reducing risks and building developmental assets: Essential actions for

promoting adolescent health. *Journal of School Health, 69*(3), 113–119.

doi:10.1111/j.1746-1561.1999.tb07219.x.

Schachter, E. (2010). Narrative identity construction as a goal-oriented endeavor: Reframing the

issue of "big vs. small" story research. *Theory & Psychology*, 21, XXX-XXX.

Schachter, E.P. (2005). Erikson meets the postmodern: Can classic identity theory rise to the

challenge? *Identity*: *An International Journal of Theory and Research, 5*(2), 137-160.

Scharmer, O. (2018). Education is the kindling of a flame: How to reinvent the 21st-century

university. Huffington Post. Retrieved from:

https://www.huffingtonpost.com/entry/education-is-the-kindling-of-a-flame-how-to-

reinvent_us_5a4ffec5e4b0ee59d41c0a9f.

Scheier, M., & Carver, C. (1992). Effects of optimism on psychological and physical well-being:

Theoretical overview and empirical update. *Cognitive Therapy and Research*, *16*(2), 201-

228.

Schein, E. H. (1997). The concept of "client" from a process consultation perspective: A guide

for change agents. *Journal of Organizational Change Management*, *10*(3), 202-216.

Schein, R. H. (1997). The place of landscape: a conceptual framework for interpreting an

American scene. *Annals of the Association of American Geographers*, *87*(4), 660-680.

Schmidt, P. (2018). The relevance of Explanatory First-Person Approaches (EFPA) for

understanding psychopathological phenomena. The role of phenomenology. *Frontiers in

Psychology*, *9*, 694.

Schueller, S.M. (2009). Promoting wellness: Integrating community and positive psychology.

Journal of Community Psychology, 37(7), 922-937.

Schulz, A., Gill, R. (2014). Community colleges and 21st century skills: Skills panels to assist

    student career success. New World of Work. Retrieved from:

    https://www.newworldofwork.org/wp-content/uploads/2016/10/New-World-of-Work-

    Skills-Panel-Report-April-2014.pdf.

Schunk, D.H. & Zimmerman, B.J. (2006). Competence and control beliefs: Distinguishing the

    means and ends. In Alexamder, P.A. & Winnie, P.H. (Eds.). *Handbook of educational*

    psychology (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Scott, B. (2018). Complexity science, generative leadership, and neuroscience: Foundations for

    developing socially adept educational leaders. *Wisdom in Education*, *8*(1), 3.

Seligman, M. (2011). Building resilience. *Harvard Business Review*. Retrieved from

    https://hbr.org/2011/04/building-resilience.

Seligman, M. (2015). *Positive Psychology Initiatives | Authentic Happiness*. [online]

    Authentichappiness.sas.upenn.edu. Retrieved from:

    https://www.authentichappiness.sas.upenn.edu/learn [Accessed 26 Sep. 2015].

Seligman, M. (2018). PERMA and the building blocks of well-being. *The Journal of Positive*

    Psychology, *13*(4), 333-335.

Seligman, M. E. (1998). What is the good life? *APA Monitor*, *29*(10), 2.

Seligman, M. E. (1999). Positive social science. *Journal of Positive Behavior Interventions*, *1*(3),

    181.

Seligman, M. E., & Maier, S. F. (1967). Failure to escape traumatic shock. *Journal of*

    Experimental Psychology, *74*(1), 1-9.

Seligman, M. E., Ernst, R. M., Gillham, J., Reivich, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education*, *35*(3), 293-311.

Seligman, M., Ernst, R., Gillham, K., & Linkins, M. (2009). Positive education: Positive psychology and classroom interventions. *Oxford Review of Education, 35*, 293–311. doi:10.1080/03054980902934563.

Seligman, M.E.P., Steen, T.A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*(5), 410–421.

Selznick, P. (1957). *Leadership in administration: A sociological interpretation*. Evanston, Ill: Row, Peterson.

Seymour, E., Hewitt, N. M., & Friend, C. M. (1997). *Talking about leaving: Why undergraduates leave the sciences* (Vol. 12). Boulder, CO: Westview press.

Sfard, A., & Prusak, A. (2005). Telling identities: In search of an analytic tool for investigating learning as a cultural activity. *Educational Researcher*, *34*(4), 14–22.

Shackman AJ, Maxwell JS, McMenamin BW, Greischar LL, Davidson RJ. (2011). Stress potentiates early and attenuates late stages of visual processing. *Journal of Neuroscience*, *31*(3),1156–1161.[PMC free article] [PubMed].

Shackman, A.J., Sarinopoulos, I., Maxwell, J.S., Pizzagalli, D.A., Lavric, A., Davidson, R.J. (2006). Anxiety selectively disrupts visuospatial working memory. *Emotion, 6*(1), 40–61. [PubMed].

Shapiro, D., Dundar, A., Huie, F., Wakhungu, P. K., Yuan, X., Nathan, A., & Hwang, Y. (2017). A National view of student attainment rates by race and ethnicity–fall 2010 cohort.

Shapiro, J., & Gross, S. (2013) *Ethical educational leadership in turbulent times- (Re)solving moral dilemmas* (2nd ed.). New York, NY: Routledge.

Sharples, M., Adams, A., Alozie, N., Ferguson, R., FitzGerald, E., Gaved, M., McAndrew, P., Means, B., Remold, J., Rienties, B., Roschelle, J., Vogt, K., Whitelock, D. & Yarnall, L. (2015). *Innovating Pedagogy 2015*: Open University Innovation Report 4. Milton Keynes: The Open University.

Shear, L., Novais, G., Means, B., Gallagher, L., & Langworthy, M. (2010). ITL Research Design. Menlo Park, CA: SRI International. Retrieved from: http://itlresearch.com/images/stories/reports/ITL%20Research%20design_15%20Nov%202010.pdf.

Shechtman, N., DeBarger, A. H., Dornsife, C., Rosier, S., & Yarnall. L. (2013). Promoting grit, tenacity, and perseverance: Critical factors for success in the 21st Century. Washington, DC: U.S. Department of Education, Office of Educational Technology, Center for Technology in Learning, SRI International. http://www.ed.gov/edblogs/technology/files/2013/02/OET-Draft-Grit-Report-2-17-13.pdf

Shechtman, N., DeBarger, A. H., Dornsife, C., Rosier, S., & Yarnall, L. (2013). Promoting grit, tenacity, and perseverence: Critical factors for success in the 21st century. Washington, DC: U.S. Department of Education, Office of Educational Technology. Retrieved from http://www.ed.gov/edblogs/technology/files/2013/02/OET-Draft-Grit-Report-2-17-13.pdf.

Shiota, M. N., Campos, B., Oveis, C., Hertenstein, M. J., Simon-Thomas, E., & Keltner, D. (2017). Beyond happiness: Building a science of discrete positive emotions. *American Psychologist*, *72*(7), 617.

Shochet, I. M., Smith, C. L., Furlong, M. J., & Homel, R. (2011). A prospective study investigating the impact of school belonging factors on negative affect in adolescents. *Journal of Clinical Child and Adolescent Psychology, 40*(4), 586-595.

Shogren, K. A., Wehmeyer, M. L., & Singh, N. N. (2017). *Handbook of positive psychology in intellectual and developmental disabilities*. Springer.

Siegel, D.J. (2003). Toward an interpersonal neurobiology of the developing mind: Attachment relationships, mindsight, and neural integration. Retrieved from: https://onlinelibrary.wiley.com/doi/pdf/10.1002/1097-0355%28200101/04%2922%3A1%3C67%3A%3AAID-IMHJ3%3E3.0.CO%3B2-.

Siegel, D.J. (2009). Mindful awareness, mindsight, and neural integration. *The Humanistic Psychologist*, 37:2, 137-158, DOI: 10.1080/08873260902892220.

Silva, E.B. (2016). Habitus: Beyond sociology. *The Sociological Review, 64*(1), 73 – 92. https://doi.org/10.1111/1467-954X.12345.

Singer, T., Lamm, C. (2009). The social neuroscience of empathy. *Annals of the New York Academy of Sciences*, *1156*(1), 81–96.[PubMed].

Singhal, H., & Rastogi, R. (2018). Psychological capital and career commitment: The mediating effect of subjective well-being. *Management Decision*, *56*(2), 458-473. https://doi.org/10.1108/MD-06-2017-0579.

Slagter, H.A., Lutz, A., Greischar, L.L., Francis, A.D., Nieuwenhuis, S., Davis, J.M., Davidson, R.J. (2007). Mental training affects use of limited brain resources. *PLoS Biology*, 5(6), e138. [PMC free article][PubMed].

Sleeter, C. E. (1986). Learning disabilities: The social construction of a special education category. *Exceptional Children*, *53*(1), 46-54.

Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., & Harney, P. (1991). The will and the ways: Development and validation of an Individual-Differences Measure of Hope. *Journal of Personality and Social Psychology*, 60, 570-585. https://doi.org/10.1037/0022-3514.60.4.570.

Snyder, C. R., Lopez, S. J., Shorey, H. S., Rand, K. L., & Feldman, D. B. (2003). Hope theory, measurements, and applications to school psychology. *School Psychology Quarterly*, *18*(2), 122–139. doi:10.1521/scpq.18.2.122.21854.

Spector, P.E. (1982). Behavior in organizations as a function of employee's locus of control. *Psychological Bulletin, 21*, 482-497.

Spivey, N. N. (1997). *The constructivist metaphor: Reading, writing, and the making of meaning*. San Diego, CA: Academic Press.

Spreitzer, G. M., Kizilos, M. A., & Nason, S. W. (1997). A dimensional analysis of the relationship between psychological empowerment and effectiveness satisfaction, and strain. *Journal of Management*, *23*(5), 679-704.

Stanford Encyclopedia of Philosophy. (2007, revised 2016). Deontological ethics. Retrieved from: https://plato.stanford.edu/entries/ethics-deontological/#Aca.

Stanford Encyclopedia of Philosophy. Dewey. (2014). Retrieved from: https://plato.stanford.edu/entries/dewey-moral/.

Stanford Encyclopedia of Philosophy. Plato. (2017). Retrieved from: https://plato.stanford.edu/entries/plato/

Stanford Encyclopedia of Philosophy. Socrates. (2018). Retrieved from: https://plato.stanford.edu/entries/socrates/.

Staticweb. (2015). The University of Maine System. Retrieved from:

https://staticweb.maine.edu/wp-content/uploads/2015/04/LD-422-A-Brief-Summary-of-

Strategies-Used-and-Activities-Undertaken-to-Recruit-2015-report-FINAL.pdf?565a1d.

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive*

Sciences, 9(2), 69–74. [PubMed].

Steinberg, L. (2007). Risk taking in adolescence. New perspectives from brain and behavioral

science. *Current Directions in Psychological Science, 16*(2), 55–59.

Steinberg, L. (2009). Adolescent development and juvenile justice. *Annual Review of Clinical*

Psychology, 5, 459–485.[PubMed].

Sternberg, R.J., Subotnik, R.F. (eds). (2006). *Optimizing student success in school with the other*

three R's: Reasoning, resilience, and responsibility. Greenwich, CT: New Age

Publishing.

Stuart, M., Lido, C., & Morgan, J. (2011). Personal stories: How students' social and cultural life

histories interact with the field of higher education. *International Journal of Lifelong*

Education, *30*(4), 489-508.

Suldo, S. M., & Shaffer, E. J. (2008). Looking beyond psychopathology: The dual factor model

of mental health in youth. *School Psychology Review*, *37*(1), 52–68.

Suldo, S., Thalji, A., & Ferron, J. (2011). Longitudinal academic outcomes predicted by early

adolescents' subjective well-being, psychopathology, and mental health status yielded

from a dual factor model. *The Journal of Positive Psychology*, *6*(1), 17-30.

Sun Jung, H., & Hyun Yoon, H. (2015). The impact of employees' positive psychological

capital on job satisfaction and organizational citizenship behaviors in the hotel.

International Journal of Contemporary Hospitality Management, 27(6), 1135-

1156, https://doi.org/10.1108/IJCHM-01-2014-0019.

Tawfik, A. A., Rong, H., & Choi, I. (2015). Failing to learn: towards a unified design approach

for failure-based learning. *Educational Technology Research and Development*, *63*(6),

975-994.

Telef, B., Furlong, M. (2017). Social and emotional psychological factors associated with

subjective well-being: A comparison of Turkish and California adolescents. *Journal of*

Cross Cultural Research, in press. Retrieved from:

https://www.researchgate.net/publication/314154509_Social_and_Emotional_Psychologi

cal_Factors_Associated_With_Subjective_WellBeing_A_Comparison_of_Turkish_and_

California_Adolescents [accessed Jul 16 2018].

The Glossary of Education Reform. (2015). Retrieved from: https://www.edglossary.org/

The William and Flora Hewlett Foundation. (2010). Education Program Strategic Plan. Menlo

Park, CA: Author. Retrieved from:

http://www.hewlett.org/uploads/documents/Education_Strategic_Plan_2010.pdf.

Thorne, A. (2004). Putting the person into social identity. *Human Development, 47*(6), 361-365.

Timofejeva, T., Svence, G., & Petrulite, A. (2016). Theoretical and practical study of the concept

of social and emotional health by Michael J. Furlong applied to the selection of

teenagers and youth. *Signum Temporis*, *8*(1), 67-75.

Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of recent literature. *A*

Review of Educational Research, 45(1), 89-125.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. (2nd ed.).

Chicago: University of Chicago Press.

Tinto, V. (1999). Taking retention seriously: Rethinking the first year of college. *NACADA Journal*, *19*(2), 5-9.

Tough, P. (2012). *How children succeed: Grit, curiosity, and the hidden power of character.* Boston: Houghton Mifflin Harcourt.

Trujillo, G., & Tanner, K. D. (2014). Considering the role of affect in learning: Monitoring students' self-efficacy, sense of belonging, and science identity. *CBE - Life Sciences Education, 13*(1), 6-15.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, *86*(2), 320–333. http://doi.org/10.1037/0022-3514.86.2.320

U.S. Department of Health and Human Services. Office for Human Research Protection. (2016). Retrieved from: https://www.hhs.gov/ohrp/

Uhl-Bien, M. (2006). Relational leadership theory: Exploring the social processes of leadership and organizing. *Leadership Quarterly, 17*(6), 654–676.

Ulriksen, L., Holmegaard, H. T., & Moller, L. (2013). Weaving a bridge of sense: Students' narrative constructions as a lens for understanding students' coping with the gap between expectancies and experiences when entering higher education. *European Educational Research Journal, 12*(3), 310-319.

Urry, H.L., van Reekum, C.M., Johnstone, T., Kalin, N.H., Thurow, M.E., Schaefer, H.S., Jackson, C.A., Frye, C.J., Greischar, L.L., Alexander, A.L., Davidson, R.J. (2006). Amygdala and ventromedial prefrontal cortex are inversely coupled during regulation of negative affect and predict the diurnal pattern of cortisol secretion among older adults. *Journal of Neuroscience, 26*(16), 4415–4425. [PubMed].

US Department of Education Secretary's Commission of the Future of Higher Education. (2006). A test of leadership: Charting the course for US higher education. Retrieved from: https://www2.ed.gov/about/bdscomm/list/hiedfuture/reports/pre-pub-report.pdf

Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research*, *78*(4), 751-796.

Vygotsky, L. (1962). *Thought and language* (E. Hanfmann & G. Vakar, Eds. Cambridge, MA: MIT Press.

Vygotsky, L. (1985). *Vygotsky and the social formation of mind*. Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Waters, L., Sun, J., Rusk, R., Cotton, A., & Arch, A. (2017). *Positive education: Visible wellbeing and positive functioning in students.* In M. Slade, L. Oades, U A Jarden (Eds.), Wellbeing, recovery and mental health (pp. 245-264) New York: NY: US: Cambridge University Press.

Watkins, E.R. (2008). Constructive and unconstructive repetitive thought. *Psychological Bulletin*. 134:163–206.[PMC free article] [PubMed].

Watkins, P. (2015). *Positive Psychology 101*. New York: Springer.

Weiss, A., King, J. E., & Enns, R. M. (2002). Subjective well-being is heritable and genetically correlated with dominance in chimpanzees (Pan trogolodytes). *Journal of Personality and Social Psychology, 83*(5), 1141–1149. doi:10.1037/0022-3514.83.5.1141.

Weiss, H.M., Brief, A.P. (2002). Affect at work: an historical perspective. In *Emotions at Work: Theory, Research, and Application in Management*, Ed. RL Payne, CL Cooper. Chichester, UK: Wiley.

Wells, G., & Claxton, G. (Eds). (2002). *Learning for life in the 21st century*. Blackwell, Oxford.

Wertsch, J. (1985). *Vygotsky and the social formation of mind*. Cambridge, MA: Harvard University Press.

Westerhof, G. J., & Keyes, C. L. M. (2010). Mental illness and mental health: The two continua model across the lifespan. *Journal of Adult Development*, *17*(2), 110–119. http://doi.org/10.1007/s10804-009-9082-y.

Wheatley, M. (2006). *Leadership and the new science: Discovering order in a chaotic world.* (3rd ed.). San Francisco, CA: Berrett Koehler Publishers.

Wheatley, M. (2010, March 4). Dr. Margaret Wheatley [Video File]. Retrieved from https://youtu.be/PvJeqA9SnpU.

Wigfield, A., Eccles, J.S., Schiefele, U., Roeser, R.W., Kean, P.D. (2006). *Development of achievement motivation.* In: Damon, W., Lerner, R.M., Eisenberg, N. (Eds). (2006). *Handbook of Child Psychology*. Vol. 3. New York: Wiley. 933–1002. Social, Emotional and Personality Development.

Wilkins, B., Boman, P., & Mergler, A. (2015). Positive psychological strengths and school engagement in primary school children. *Cogent Education, 2*(1), 1–11. http://www.tandfonline.com/doi/full/10.1080/2331186X.2015.1095680.

Wolters, C. A., & Benzon, M. B. (2013). Assessing and predicting college students' use of strategies for the self-regulation of motivation. *Journal of Experimental Education*, *81*(2), 199-221.

Wong, P. T. P. (2017). Meaning-centered approach to research and therapy, second wave

 positive psychology, and the future of humanistic psychology. *The Humanistic*

 Psychologist, 45(3), 207-216.

World Economic Forum (WEF). (2015). Retrieved from:

 https://www.weforum.org/agenda/2016/03/21st-century-skills-future-jobs-students/

World Federation for Mental Health. (2013). *The people's charter for mental health*.

 Retrieved from: http://staging.wfmh.com/wp-content/uploads/2014/02/THEPEOPLES-

 CHARTER-2013.pdf

World Federation of Mental Health. (2013). Retrieved from:

 https://ec.europa.eu/health/sites/health/files/mental_health/docs/ev_20161006_co06_en.p

 df

Wosnitza M., Peixoto F. (2018) Resilience in education: Emerging trends in recent research.

 In Wosnitza M., Peixoto F., Beltman S., Mansfield C. (Eds) *Resilience in*

 Education. Springer, Cham.

Wright, T. A. (2017). Seligman's positive psychology: Past, present and future connections with

 organizational research. *The handbook of stress and health: A guide to research and*

 practice, 415-426.

Yammarino, F. J., & Dansereau, F. (2008). Multi-level nature of and multi-level approaches to

 leadership. *Leadership Quarterly, 19*(2), 135–141.

Yates, T. M., & Masten, A. S. (2004). Fostering the future: Resilience theory and the practice of

 positive psychology. In P.A. Linley& S. Joseph (Eds). *Positive Psychology in Practice*,

 521-539. Hoboken, NJ: Wiley.

You, S., Dowdy, E., Furlong, M. J., Renshaw, T., Smith, D. C., & O'Malley, M. D. (2013). Further validation of the Social and Emotional Health Survey for high school students. *Applied Research in Quality of Life, 9*(4), 997–1015. doi: 10.1007/s11482-013-9282-2.

You, S., Dowdy, E., Furlong, M. J., Renshaw, T., Smith, D. C., & O'Malley, M. D. (2014). Further validation of the Social and Emotional Health Survey for high school students. *Applied Quality of Life Research. Advance online publication*. doi:10.1007/s11482-013-9282-2.

You, S., Furlong, M. J., Felix, E., & O'Malley, M. D. (2015). Validation of the Social and Emotional Health Survey for five sociocultural groups: Multigroup invariance and latent mean analyses. *Psychology in the Schools*. Manuscript under review.

You, S., Furlong, M., Felix, E., & O'Malley, M. (2015). Validation of the Social and Emotional Health Survey for five sociocultural groups: Multigroup invariance and latent mean analyses. *Psychology in the Schools*, *52*(4), 349-362.

You, S., Ritchey, K. M., Furlong, M. J., Shochet, I., & Boman, P. (2011). Examination of the latent structure of the psychological sense of school membership scale. *Journal of Psychoeducational Assessment,* 29(3), 225-237.

Young, Jeffery. (2007). *Schema therapy*. American Psychological Association.

Zachariah, S., Boman, P., Mergler, A., & Furlong, M. J. (2015). Effect of self-deception on well-being and anxiety in university students. *Cogent Psychology*, 2, 993850, 1–17. doi:10.1080/23311908.2014.993850.

Zadina, J. N. (2015). The emerging role of educational neuroscience in education reform. *Educational Psychology*, *21*(2), 71-77.

Zajonc, A. (2016). Contemplation in education. In *Handbook of mindfulness in education* (pp. 17-28). Springer, New York, NY.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In *Handbook of self-regulation* (pp. 13-39).

Zimmerman, B. J., & Kitsantas, A. (2014). Comparing students' self-discipline and self-regulation measures and their prediction of academic achievement. *Contemporary Educational Psychology*, *39*(2), 145-155.

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation*, 17, 191–210. doi:10.1080/10474410701413145.

Zins, J.E., Weissberg, R.P., Wang, M.C., Walberg, H.J. (2004). *Building academic success on social and emotional learning*. New York: Teachers College Press.

Zozakiewicz, C., & Rodriguez, A. J. (2007). Using socio transformative constructivism to create multicultural and gender-inclusive classrooms: An intervention project for teacher professional development. *Educational Policy, 21*(2), 397-425.

APPENDIX A: INSTRUMENTS

NAME:_____   AGE:____(years) ____(mths)

DATE:___/___/____ MALE / FEMALE (circle one)

PROGRAM:_____

ROPELOC©	**GER20/9/00**

PLEASE READ THESE INSTRUCTIONS FIRST
                    This is not a test - there are no right or wrong answers.
     This is a chance for you to look at how you think and feel about yourself. It is important that you:
- are honest
- give your own views about yourself, without talking to others
- report how you feel NOW (not how you felt at another time in your life, or how you might feel tomorrow)

     Your answers are confidential and will only be used for research or program development. Your answers will not be used in any way to refer to you as an individual.

     Use the eight point scale to indicate how true (like you) or how false (unlike you), each statement over the page is as a description of you. Please do not leave any statements blank.

SOME EXAMPLES

A. I am a creative person.   1   2   3   4   5   ⑥   7   8

(The 6 has been circled because the person answering believes the statement "I am a creative person" is sometimes true. That is, the statement is sometimes like him/her.)

B. I am good at writing poetry.   1   ②   3   4   5   6   7   8

(The 2 has been circled because the person answering believes that the statement is mostly false as far as he/she is concerned. That is he/she feels he/she does not write good poetry.)

C I enjoy playing with pets.   1   2   3   4   5   ⑥̸   ⑦   8

(The 6 has been circled because at first the person thought that the statement was mostly true but then the person corrected it to 7 to show that the statement was very true about him/her.)

If still unsure about what to do, ASK FOR HELP.

STATEMENT

                                                  FALSE

TRUE

                              not like me   **like me**

Statement	not like me → like me
01. When I have spare time I always use it to paint.	1 2 3 4 5 6 7 8
02. I like cooperating in a team.	1 2 3 4 5 6 7 8
03. No matter what the situation is I can handle it.	1 2 3 4 5 6 7 8
04. I can be a good leader.	1 2 3 4 5 6 7 8
05. My own efforts and actions are what will determine my future.	1 2 3 4 5 6 7 8

----

06. I prefer to be actively involved in things.	1 2 3 4 5 6 7 8
07. I am open to different thinking if there is a better idea.	1 2 3 4 5 6 7 8
08. In everything I do I try my best to get the details right.	1 2 3 4 5 6 7 8
09. Luck, other people and events control most of my life.	1 2 3 4 5 6 7 8
10. I am confident that I have the ability to succeed in anything I want to do.	1 2 3 4 5 6 7 8

----

11. I am effective in social situations.	1 2 3 4 5 6 7 8
12. I am calm in stressful situations.	1 2 3 4 5 6 7 8
13. My overall effectiveness in life is very high.	1 2 3 4 5 6 7 8
14. I plan and use my time efficiently.	1 2 3 4 5 6 7 8
15. I cope well with changing situations.	1 2 3 4 5 6 7 8

----

16. I cooperate well when working in a team.	1 2 3 4 5 6 7 8
17. I prefer things that taste sweet instead of bitter.	1 2 3 4 5 6 7 8
18. No matter what happens I can handle it.	1 2 3 4 5 6 7 8
19. I am capable of being a good leader.	1 2 3 4 5 6 7 8
20. I like being active and energetic.	1 2 3 4 5 6 7 8

----

21. What I do and how I do it will determine my successes in life.	1 2 3 4 5 6 7 8
22. I am open to new thoughts and ideas.	1 2 3 4 5 6 7 8
23. I try to get the best possible results when I do things.	1 2 3 4 5 6 7 8
24. When I apply myself to something I am confident I will succeed.	1 2 3 4 5 6 7 8
25. My future is mostly in the hands of other people.	1 2 3 4 5 6 7 8

----

26. I am competent and effective in social situations.	1 2 3 4 5 6 7 8
27. I can stay calm and overcome anxiety in almost all situations.	1 2 3 4 5 6 7 8
28. I am efficient and do not waste time.	1 2 3 4 5 6 7 8
29. Overall, in all things in life, I am effective.	1 2 3 4 5 6 7 8
30. When things around me change I cope well.	1 2 3 4 5 6 7 8

----

31. I am good at cooperating with team members.	1	2	3	4	5	6	7	8
32. I can handle things no matter what happens.	1	2	3	4	5	6	7	8
33. I solve all mathematics problems easily.	1	2	3	4	5	6	7	8
34. I am seen as a capable leader.	1	2	3	4	5	6	7	8
35. I like to get into things and make action.	1	2	3	4	5	6	7	8

---

36. I can adapt my thinking and ideas.	1	2	3	4	5	6	7	8
37. If I succeed in life it will be because of my efforts.	1	2	3	4	5	6	7	8
38. I try to get the very best results in everything I do.	1	2	3	4	5	6	7	8
39. I am confident in my ability to be successful.	1	2	3	4	5	6	7	8
40. I communicate effectively in social situations.	1	2	3	4	5	6	7	8

---

41. My life is mostly controlled by external things.	1	2	3	4	5	6	7	8
42. I am calm when things go wrong.	1	2	3	4	5	6	7	8
43. I am efficient in the way I use my time.	1	2	3	4	5	6	7	8
44. I cope well when things change.	1	2	3	4	5	6	7	8
45. Overall, in my life I am a very effective person.	1	2	3	4	5	6	7	8

Social Emotional Health Survey–Higher Education

Prompt: How true do you feel that these statements are about you personally?
Response (for all items)

       1 = Very much unlike me
       2 = Unlike me
       3 = Somewhat unlike me
       4 = Somewhat like me
       5 = Like me
       6 = Very much like me

Belief-in-Self   Very much unlike me   Very much like me

                               1   2   3   4   5   6

       Self-Efficacy
1. I trust my own ability to overcome challenges that I face in my life
2. Generally, I feel capable of overcoming obstacles
3. I will be able to achieve most of the goals that I have set for myself
       Persistence
4. I do not stop my work even if it is very difficult
5. I persist on tasks that I cannot immediately complete
6. I stay focused while studying despite distractions.
       Self-Awareness
7. I am able to identify the motivations behind my actions.
8. I recognize my moods and feelings.
9. I have a good sense of why I have certain feelings most of the time.

Belief-in-Others
       Family Support
10. My family continues to love and support one another in tough situations.
11. There is a sense of togetherness within my family.
12. My family gets along well with each other.
       Institutional Support
13. Outside of my friends, there are other people on campus who care about my well-being.
14. I feel like there is a strong feeling of togetherness on my campus.
15. I feel like I belong at this university.
       Peer Support
16. I have at friend at my college who cares about me.
17. I have a friend who gives me the emotional support I need.
18. I can talk to my friends about pretty much anything.

Emotional Competence
       Cognitive Reappraisal
19. When I feel down, I try to focus on the positives.
20. I can lift my mood by redirecting my thoughts to positive ideas
21. I am able to think about the alternatives to a problem under stressful situations.

Empathy

22. I am aware of others' hardships.
23. I feel badly when my friends are put down.
24. I feel for my friends who are afraid or nervous about graduating.

Self-Regulation

25. I think about potential consequences before I act.
26. I can wait for what I want.
27. I think before I act.

Engaged Living

Gratitude

28. I appreciate the relationships I have developed throughout my life.
29. I appreciate those who are close to me.
30. When I reflect on my life, there is much to be grateful for.

Zest

31. My friends describe me as full of life.
32. I approach life with excitement and energy
33. I feel energetic in my life right now

Optimism

34. I am able to stay positive even when facing uncertain situations.
35. Each day I look forward to having a lot of fun.
36. I usually expect to have a good day.

APPENDIX B: PARTICIPANT INFORMATION & CONSENT FORM

UNIVERSTIY OF NEW ENGLAND

CONSENT FOR PARTCIPATION IN RESEARCH

Project Title: Covitality from Counseling to the Classroom: A Psychometric Study of Covitality and Personal Effectiveness in Rural Maine Community College Graduates

Principal Investigator: Rebecca A. Martin, Doctoral student, The University of New England: rmartin7@une.edu.

Introduction:

Please read this form. The purpose of this form is to provide you with information about this research study, and if you choose to participate, to document your decision.

You are encouraged to ask any questions about this study, now, during, or after the project is complete. You can take as much time as you need to decide whether you want to participate. Your participation is voluntary. Surveys will no longer be accessible after June 1st, 2018.

Why is this study being done?

This researcher is inviting adult students currently graduating from the college to participate in research related to positive non-cognitive traits measurement. These traits, in combination, are measured by a term called covitality. A survey will be administered to identify the non-cognitive skills present in the graduating class. The survey is a combination of the Social Emotional Health Survey-Higher Education; and, the Review of Personal Effectiveness with Locus of Control. These instruments hope to identify the non-cognitive strengths present in the graduating class of 2018. I am attempting to identify these traits, as a way to assess the workforce readiness of graduating students. This form represents a process called: "informed

consent," and allows participants to be educated about the research in order to choose whether to take part in it.

As an adjunct faculty in the Mental Health program, and a community based psychotherapist, I am interested in the results on non-cognitive performance, as part of your education here, at the college. You may already know the researcher as a teacher, counselor, or as a member of the college community; however, this study is separate from those roles. I am completing this study as a doctoral student at The University of New England. The purpose of this study is to examine the relationship between the non-cognitive measures: the covitality questionnaire (SEHS-HE) and the personal effectiveness questionnaire (ROPELOC) in relation to student grade point average (GPA) upon graduation.

Who will be in this study?

Study participants will be selected based on eligibility for graduation, May 2018. They shall be ages 18-65. All participation will be voluntary, with confirmation that involvement does not impact any course work or course outcomes. The surveys will arrive in institutional email, and graduating students will disclose their self-assessment answers to the combined questionnaires: the SEHS-HE and the ROPELOC. This will include a request for students to disclose their name, age, gender, and program. I will discard any incomplete surveys. I will use these surveys to better understand the non-cognitive measures you identify in relationship to the cognitive measure of grade point average (GPA).

Both an invitation to participate, and a consent to obtain this information from you, along with your consent to obtain your Grade Point Average from the college, is included in this email.

What will I be asked to do?

If you agree to be in this study, you will be asked to:

1. Complete an online questionnaire. This should take no more than 20 minutes of your time. The survey identifies non-cognitive traits, one related to covitality and the other related to personal effectiveness. Links to this survey will be emailed to graduating students before graduation.

2. After consent is given, students will provide the researcher with identifiable information, including Name, Program of study, Age and Gender, along with the answers to the survey questions.

3. Completing these questionnaires gives consent to allow the researcher to collect Career GPA from the College. It also acknowledges this information will be stored for research purposes.

This study is completely voluntary. There is no reward or punishment involved in participation, and involvement is at the discretion of each graduating student. The researcher is the only person that will have access to this combination of confidential information, and will collect and store this information with respect to protecting each student and following ethical standards.

It is absolutely the student's choice regarding whether or not to participate in this study. No one at the college will treat any participant differently based on this research. If a student elects to join the study now, each student can change their mind and withdraw at any time. Information will be discarded as is reasonable to do, within this research. Participation in the study has no effect on any relationship within the college, administration or with this researcher.

What are the possible risks of taking part in this study?

The risks involved in your participation are minimal. Though revealing your name, program, and perceptions may carry some discomfort and vulnerability, and include time lost, being in this study will not pose risk to your safety, wellbeing, or academic standing. There are counseling services, free of charge, on campus, if any student wishes to discuss issues that may

arise while completing these surveys. However, there are no foreseeable risks associated with participation in this study.

What are the possible benefits of taking part in this study?

Potential benefits of your participation include sharing your student experience by expressing your point-of-view, gaining insight into your non-cognitive skills, and providing a self-report of your experience as a student, here.

What will it cost me?

Participation in this research study is free. The time and thoughtfulness required to complete the questionnaires is the only cost to you. There is no financial or academic benefit to participation. No payment or extra credit is extended.

How will my privacy be protected?

Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this or related research projects. Student information will be de-identified once data is mined and stored, and will be stored with encryption and passwords, stored outside the community college setting, and will remain in this researchers possession until all research is complete. The data will be kept secure and will be purged and destroyed at the completion of the study.

How will my data be kept confidential?

This study will include shared details transmitted over the internet using firewall and encryption protections. Your confidential information will be collected and stored in a manner that protects your data. Firewalls, encryption, passwords, and external hard drive storage off site, are some of the ways the electronic information will be protected. Additionally, this researcher uses standards of confidential practice when managing your data. Your identifiers will

be coded in order to de-identify your information, and these pseudonyms will be used to track aggregate patterns. This researcher will be the only person handling this combination of your information, and will safe guard it in accordance to research policies.

Institutional Research staff, at the college, will provide respondent's GPA scores, following graduation. Please note that regulatory agencies, and the Institutional Review Board may review the research records, excluding personal details. A copy of your signed consent form will be kept for three years after the project is complete before it is destroyed. The consent forms will be stored in a secure location controlled by this researcher. No other institutional staff will have access to, or be affiliated with, any data obtained from you during this project.

Upon written request, any student may have a report of their own questionnaire results or a draft copy of findings. The University of New England, also, provides contacts with whom participants can speak to clarify rights as a participant or to seek general information regarding research guidelines. The contact number for this research is: (207) 221-4962.

What are my rights as a research participant?

As a participant, your basic human rights are essential. Additionally, you have a right to confidentiality and privacy. Your participation is voluntary. Your decision to participate will have no impact on your current or future relations with the college or the University of New England. You may skip or refuse to answer any question for any reason. This will eliminate your questionnaires from data analysis.

What other options do I have?

You may choose not to participate.

Whom may I contact with questions?

The researcher conducting this study is Rebecca A. Martin. For questions or more information concerning this research you may contact her at rmartin7@une.edu or rmartin@kvcc.me.edu

If you choose to participate in this research study and believe you may have suffered a research related injury, please contact Carol Burbank, at The University of New England at cburbank@une.edu.

If you have any questions or concerns about your rights as a research subject, you may call Olgun Guvench, M.D. Ph.D., Chair of the UNE Institutional Review Board at (207) 221-4171 or irb@une.edu.

Will I receive a copy of this consent form?

You will asked to print a copy of this consent form for your own records.

IF YOU CHOOSE TO PARTICIPATE IN THIS STUDY

The link below will take you to an online survey. The first page will ask you to review consent and agree to participate. You will not be able to take the survey without completing this section. The next page will provide you with a space for a digital signature, and ask you to initial and date your consent. This email includes an individual passcode that you will input here, as well, to access your survey.

Participant's Statement

I understand the above description of this research and the risks and benefits associated with my participation as a research subject. I agree to take part in the research and do so voluntarily. My signature will be collected as part of the electronic survey.

CLICK HERE TO GO TO THE SURVEY

 Researcher's Statement

The participant electronically signing and completing the survey had sufficient time to consider

the information, had an opportunity to ask questions, and voluntarily agreed to be in this study.

Researcher's signature *Rebecca A. Martin*   Date 4/27/18

Printed name: Rebecca A. Martin

APPENDIX C: INVITATION TO PARTICIPATE IN INTERNET SURVEY

From: Rebecca A. Martin (Doctoral Candidate)

To: All graduating students of the College May 2018

Subject: Graduating student surveys for doctoral research

I am writing to you to request your participation in a brief survey. The survey should take approximately 20 minutes to complete. This survey is part of the doctoral research being conducted by Rebecca A. Martin, a student at The University of New England, and an adjunct instructor at the college.

Your honest and thorough answers to the survey will assist this researcher with identifying the non-cognitive strengths present in this graduating class of community college students.

A clickable link will be emailed with this invitation. It will include an individual passcode which makes this survey anonymous to the college. Identifying information will be asked, and permission to obtain your GPA from the college after you graduate is part of the consent agreement. Your information will only be used for statistical purposes and will be reported only in aggregated form.

Consent can be reviewed here: http://www.kvccdocs.com/martin-consent.html

Your participation in the survey is completely voluntary and all of your responses will be kept confidential.

The University of New England Institutional Review Board has approved this survey.

Should you have any comments or questions, please feel free to contact me at rmartin7@une.edu.

Thank you very much for your time and cooperation. This feedback is so important, and I'm hopeful that you all will participate.

Warmly,

Rebecca A. Martin

UNE Doctoral Candidate