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Self-Perception as a Predictor of Academic Performance in Adolescents With Learning Disabilities

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Walden University
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Abstract

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Disabilities

by

Kirk L. Rhodes

MPA, Southern Illinois University at Carbondale, 2002

BS, University of Central Missouri, 1996

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Special Education

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Abstract

Adolescents often suffer with negative feelings and low self-esteem, leading to an overall negative self-perception. Prior researchers have linked adolescent self-perception, academic performance, and learning disabilities, but more research is required. This quantitative study examined relationships between self-perception of reading, writing, spelling, and mathematics competence. In addition, global self-worth was examined through the Harter-Renick Self-Perception Profile for Learning Disabled Students (HRSPP). Student academic performance as measured by Stanford Achievement Test-10 Total Reading (SATrd) and Total Math (SATmh) scores among adolescents with learning disabilities were also examined. Student records from the Green School were gathered ($n = 128$), with their perceived intellectual ability, reading, writing, spelling, mathematics competence, and global self-worth (GLOSW) HRSPP subscale scores treated as predictors. Participants' chronological age and specific learning disability (SPLD) served as maturation and selection effect modifiers. SATrd and SATmh were dependent variables in a multiple regression analysis using step-wise data entry. GLOSW emerged as a significant predictor variable, $\beta = .185$, $t (2.12) = .036$, $p < .05$ with SATrd as the dependent variable. Thus, the higher the GLOSW HRSSP score was, the higher the SATrd score was as well. No significant predictors of criterion variable SATmh existed. These results could elucidate ways to help students with learning disabilities enhance self-esteem, which may lead to improved academic success and overall positive social change.

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Dedication

This dissertation is dedicated to God, the most highly revered educator of the universe, and His son Jesus Christ, whom I believe to be my personal savior and source of my eternal salvation. I wish to further dedicate this research project to my mother, Delores P. Rhodes, for helping me make the impossible possible; my father Dr. Irvin E. Rhodes; my maternal grandparents, W. C. & Geraldine Perkins; my uncle Dr. Enoch H. Oglesby; as well as my stepmother Dr. Penny M. Rhodes. Your guidance and support throughout my life has been my most significant motivating force. Thank you all! I also wish to acknowledge my sister, Dr. Lauren M. Rhodes; cousins Dr. Amanda M. Perkins, and Dr. Lisa Strauther for setting a great example by earning their doctorates before me. In addition, I would like to acknowledge my wonderful family of aunts, uncles, and cousins, many of whom are professional educators and administrators with well over 300 years of combined educational experience.

Above all, this research project is dedicated to the thousands of people with learning disabilities all over the world. It is my sincere prayer and hope that my efforts will help move forward future research and practical applications that will aid in improving the quality of special education. When I think of the importance of enriching the lives of students with learning disabilities, I recall the following verse: "The stone the builders rejected has become the cornerstone; the Lord has done this, and it is marvelous in our eyes" (Matthew 21:42). On any given day these amazing students, that many have rejected, could indeed become the cornerstones of our society. United we stand.

Acknowledgements

I wish to express a special thank you to Bradley M. Rogers Jr., and Dr. Mari Jo Renick for helping me to attain a hallmark of academic success in the name of special education and dyslexia research.

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In addition, I wish to give a humble thank you to Dr. Nancy Dawson for mentoring me during my days as a graduate teaching assistant at Southern Illinois University at Carbondale in the Africana Studies Department. I am also grateful for having had the opportunity to learn about political science from the late Dr. Richard Adams of University of Central Missouri. Lest I be remiss, I am also grateful to the Barszcz family of East Aurora, NY for their support, and my circle of close friends who never lost faith in me during this arduous endeavor.

Lastly, I wish to express my belief that, while the art of being a special educator draws upon several academic disciplines and research genres, determination and imagination are still chief among them. It is for this reason that I wish to acknowledge the United States Army for imparting to me a sense of mental fortitude. In particular, I would like to take this opportunity to say "thank you" to Dr. Ronald Mallet, of the University of Connecticut, for his audacious research into practical time travel as an example of limitless imagination and ingenuity.

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Chapter 1: Introduction to the Study

Background

According to researchers at the National Center for Learning Disabilities, 5% of

the 2.4 million United States public school students identified with learning disabilities

under the Individuals with Disabilities Education Act (Cortiellia & Horowitz, 2014).

These learning disabled students frequently struggle to find academic success. Between

12% to 26% of secondary students with learning disabilities received average or above-

average scores on math and reading assessments, compared with 50% of students in the

general population (Cortiellia & Horowitz, 2014). Therefore, mitigating those factors

that contribute to the academic challenges faced by students with learning disabilities

could help students with special needs to overcome these obstacles.

Students with learning disabilities tend to speak with school guidance counselors

about external challenges with teachers and peers, as well as internal problems such as

low self-esteem and self-confidence (Reis & Colbert, 2004). Pattison (2010) called for

new techniques to be used to increase outreach efforts to work with adolescents with

learning disabilities. Undheim and Whichstrom (2011) found that behavioral problems in

the reading disabilities group emphasized the need for school-based interventions and

mental health services. Additionally, Cleary and Scott (2011) stated that "a significant

percentage of children and adolescents have emotional or behavioral problems serious

enough to merit a mental health diagnosis" (p. 1). The afrorementioned studies provide

evidence of the impact social and emotional issues can have on special needs students.

The professionals in school counseling have responded with new techniques and

concepts for addressing the emotional needs of students with learning disabilities. For

example, Saeki et al. (2011) discussed models for using response to intervention (RTI)

models for school psychologists to address the social, emotional, and behavioral

problems of students with learning disabilities. The emotional problems some students

with learning disabilities experience may also be tethered to self-perception. Thus,

education systems seek to offer services that can target students' self-perception issues.

For example, Leone and Whitson (2013) described how Life Space Crisis Intervention

(LSCI) enables school counselors to help students with learning disabilities to

"strengthen self-control and a sense of self-worth" (p. 61). Furthermore, Idan and

Margalit (2014) researched "the significance of hope in promoting students' motivation,

self-efficacy, effort, and learning achievements" (p. 143).   Smith et al. (2015) addressed

the use of RTI to meet the "social and emotional needs" of students with learning

disabilities, as the legal battles to deliniate disabilities from disturbances continue to

marginalize thispopulation (pp. 257-258).

Problem Statement

Additional research regarding the effects of self-perception on the academic

performance of students with learning disabilities is necessary in order to help improve

the effectiveness of academic disabilities support services. This type of research could

assist in creating more effective learning environments for students with learning

disabilities. Adolescents may suffer from poor self-image and self-esteem. Furthermore,

thoughts about the way they are perceived by others—such as their peers, family

members, and teachers—can exacerbate an adolescent's negative self-image. It is

important to maintain a nurturing and supportive school environments for students with

learning disabilities (Lambie & Milsom (2010). If this type of support is lacking, students

with learning disabilities could experience emotional distress. These types of feelings could inhibit adolescent students' perceived abilities to perform academic tasks to their best ability. For example, Mavroveli et al. (2009) highlighted the need for schools to identify and provide support for students with negative self-esteem issues, as these may lead to deficits in their ability to use their emotional intelligence. This type of negative psychological schema could be even more impactful on the attitudes of adolescents with learning disabilities. This represents an obstacle to providing quality special education programs and can lead to a misallocation and misapplication of supporting resources. Marchesi, Cook, and Inner City Fund International (2012) promoted the importance of maintaining students' positive socio-emotional well-being in order to bolster their academic performance. Thus, further research into the effects of students with learning disabilities' (SLD) self-perception of reading and math abilities on their academic performance in reading and math may mitigate negative instances of schools' actions and increase positive inputs by the school systems.

Purpose of the Study

Laird (2007) claimed that "people's feelings are responses to relations between their circumstances and their behavior" (p. 123). Thus, to gain a better understanding of the circumstances surrounding students with learning disabilities, and the perceptions related to them, in this quantitative study I explored the relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students. Additionally, I examined students' academic performance as measured by SAT-10 Total Reading and Total Math scores among students at a boarding school for

adolescents with learning disabilities. In order to achieve this objective, I conducted the study at a boarding school for students with learning disabilities while utilizing the HRSPP as a data collection instrument. The participant data for this research project consisted of 128 archived records from students in Grades 7-12. Because the census represents six different grade levels and various learning disabilities, maturation and selection are possible effects on the predictors of interest. According to Slaughter (2012), effects such as these should be accounted for by including them as modifiers within the model. Thus, participants' chronological age, and specific learning disability were treated as effect modifiers. Stanford Achievement Test-10 Total Reading and Total Math scores serve as the dependent variables in a multiple regression analyses using step-wise data entry in order to highlight any significant relationship and measure its effect. The insights gained from this investigation could be pivotal in helping schools create emotionally nurturing environments that promote positive self-perception within students.

Research Question

The present study was guided by the following research question (RQ):

RQ1: What is the relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities?

Hypotheses for this study are as follows:

H$_{01}$: There is no significant relationship between students' self-perception of reading competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a1}$: There is a significant relationship between students' self-perception of reading competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{02}$: There is no significant relationship between students' self-perception of writing, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a2}$: There is a significant relationship between students' self-perception of writing, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{03}$: There is no significant relationship between students' self-perception of spelling competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-

10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{a3}: There is a significant relationship between students' self-perception of spelling competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{04}: There is no significant relationship between students' self-perception of mathematics competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{a4}: There is a significant relationship between students' self-perception of mathematics competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{05}: There is no significant relationship between students' self-perception of general intellectual ability, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a5}$: There is a significant relationship between students' self-perception of general intellectual ability, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{06}$: There is no significant relationship between students' self-perception of global-self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a6}$: There is a significant relationship between students' self-perception of global-self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{07}$: There is no significant relationship between students' chronological age and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a7}$: There is a significant relationship between students' chronological age and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{08}: There is no significant relationship between students' specific learning disability and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{a8}: There is a significant relationship between students' specific learning disability and students' academic performance as measured by SAT-10 Total Reading and Total Mathematics scores among adolescents at a boarding school for adolescents with learning disabilities. These inquiries and the topic in general, remain in the focus of discussion and research within the field of special education.

The HRSPP was employed as a data collection instrument for this study, and thus the subscale scores serve as the predictor variables in a multiple regression analysis using step-wise data entry. Chronological age and specific learning disability will serve as variable modifiers for potential maturation and selection effects.

Theoretical Base

According to Harter's (1988) seminal self-perception research, an individual's perception of the world is sublime; this view grounds the significance of the student self-perception data presented in this study. Harter (1988) made the assertion that humans use speech, both inner and outer, as a way of interactively perceiving the universe, thus further contributing to the richness and value of self-perception as a research variable. Furthermore, the continuous practice of this speech usage creates what William James (1880/1950) described as a practical or pragmatic body of wisdom, which humans communicate to each other continuously through generations. Thus, the way in which

adolescents perceive themselves, as compared to their peers or other significant individuals, could potentially affect their academic performance.

Owing to the importance of self-perception, it is natural that its potential relationship with academic performance has been a topic of academic research, thus resulting in some interesting and important findings. These inquiries examined issues such as self-efficacy and academic self-perception, as well as writing, mathematical, and standardized test scores as a measure of perceived competencies. According to Areepattamannil (2011), "second-generation immigrant adolescent students who reported high positive affect toward science performed significantly better in mathematics and science than did their second-generation peers who reported low positive affect toward science" (p. 710). Areepattamannil's study also demonstrated that there were indeed some student participants that registered neutral affect towards science, yet based on these findings, it can also be posited that self-perception could be a successful predictor of academic performance. Chohan and Khan (2010) took the investigation of the relationship between self-perception and academic performance a step further. In their study, the authors also examined the role of parental support, reporting that this perception, as a facet of self-perception, is significantly correlated with academic performance. Conversely, Leibham, Alexander, and Johnson (2013) found no measureable relationship between self-perception and achievement.

Nature of the Study

This quantitative correlational study used a multiple regression analysis using step-wise data entry. The 128 student participants' perceived intellectual ability, reading, writing, spelling, mathematics competence, and global self-worth HRSPP subscale scores

were treated as predictor variables. The HRSPP subscales serve as predictor variables, while while Stanford Achievement Test-10 scores serve as the academic performance measure and the dependent variable. Harding and Jupp (2006) suggested that using a census as a sampling method can be extremely effective in bolstering population representation within a study. Thus, data required for this analysis were obtained by using a census sample to gain student participants attending a boarding school for adolescents with learning disabilities. Because the census includes students from six different grades and various learning disabilities, maturation and selection effects are considered by incorporating participants' chronological age and specific learning disability as modifers. The participants within the sample of this study include: 128 male adolescents from ages 12 to 18 years, ranging from grades 7 through 12, consisting of black, Asian, Latino, Middle-Eastern/North African, white, and other ethnicities, having United States and international citizenships, with AD/HD, ASD, CAPD, Comorbid, DD, SLD, and ODD learning disabilities. The data collected is extant. The specific analytical rationale and framework will be elaborated on more in Chapter 3 of this dissertation.

Definitions

Attention-deficit /hyperactive disorder (AD/HD): is the inability to focus, being overactive, not being able control behavior, or a combination of these (American Psychiatric Association, 2013).

Aspberger syndrome (ASP): is a developmental brain disorder affecting socialization (American Psychiatric Association, 2013). The Diagnostical and Statistical Manual of Mental Disorders no longer recognizes Aspbergers syndrome. However,

student records carrying Aspberger syndrome as a diagnosed learning disability were collected in the census sample.

Autism spectrum disorder (ASD): A disorder that is manifested through qualitative impairments in social interaction and communication and restricted, repetitive, and stereotyped patterns of behavior, activities, and interests. It can thus be understood as a developmental brain disorder that can affect learning and language (American Psychiatric Association, 2013).

CAPD: Central Auditory Process Disorder prevents affected individuals from processing the information they hear in the same way as others do, because their ears and brain do not fully cordinate (American Psychiatric Association, 2013). CAPD is one of the five learning disabilities that comprise the Specific Learning Disability modifier for the study.

Chronological Age: The age of the student participants found within the archived student records were used as an effect modifier within the regression analysis. It is expected that ages will range between 12-18 years per student.

Comorbid: Comorbidity, or presence of more than one learning disability, is present in approximately 41% of diagnosed cases. Some conditions may be treated with varying medications or in conjunction with remediation (American Psychiatric Association, 2013). Comorbid is one of the five learning disabilities that comprise the Specific Learning Disability modifier for the study.

Depressive Disorders (DD): Depressive Disorders are characterized by the presence of sad, empty, or irritable moods, accompanied by somatic and cognitive changes that significantly affect the affected individual's capacity to function (American

Psychiatric Association, 2013). DD is one of the five learning disabilities that comprise

the Specific Learning Disability modifier for the study.

Global Self-Worth: Global Self-Worth is one of the HRSPP sub-scales that was

used as a predictor variable in the study. This item measures the overal sense of value

student partcipants' have for themselves as persons (Harter & Renick, 2012).

Self-Perception of General Intellectual Ability: Self-Perception of General

Intellectual Ability is one of the HRSPP sub-scales that were used as a predictor variable

in the study. This item measures the overal feeling of the participants' perception of the

strength of their overall intellectual ability (Harter & Renick, 2012).

Self-Perception of Math Competence: Self-Perception of Math Competence is one

of the HRSPP sub-scales that were used as a predictor variable in the study. This item

measures the overal feeling of the participants' perception of the strength of their ability

to solve math problems (Harter & Renick, 2012).

Self-Perception of Reading Competence: Self-Perception of Reading Competence

is one of the HRSPP sub-scales that were used as a predictor variable in the study. This

item measures the overal feeling of the participants' perception of the strength of their

ability to read (Harter & Renick, 2012).

Self-Perception of Spelling Competence: Self-Perception of Spelling Competence

is one of the HRSPP sub-scales that were used as a predictor variable in the study. This

item measures the overal feeling of the participants' perception of the strength of their

ability to spell (Harter & Renick, 2012).

Self-Perception of Writing Competence: Self-Perception of Writing Competence

is one of the HRSPP sub-scales that were used as a predictor variable in the study. This

item measures the overal feeling of the participants' perception of the strength of their ability to write (Harter & Renick, 2012).

Specific Learning Disorders (SLD): Specific Learning Disorders are characterized by persistent difficulties with learning academic skills in a variety of domains, including reading, spelling, written expression, and mathematics (American Psychiatric Association, 2013). SLD is one of the five learning disabilities that comprise the Specific Learning Disability modifier for the study.

Oppositional Defiance Disorder (ODD). Oppositional Defiance Disorder is a persistent pattern of tantrums, arguing, and angry or disruptive behavior toward parents and other authority figures (American Psychiatric Association, 2013). ODD is one of the five learning disabilities that comprise the Specific Learning Disability modifier for the study.

Assumptions

The assumption implicit in this study is that the data is extracted and assembled in accordance to and under the finest traditions of educational science. A further underlying assumption is that the participant data reflects a population of adolescents with learning disabilities diagnosed by a reliable and appropriate practitioner. In addition, it is assumed that the HRSPP and SAT-10 were given over a three-day period called "All School Testing." During the All School Testing week, it is further assumed that students are separated by grade level and then allowed to complete the HRSPP and SAT-10 within their respective grade level group.

Limitations

Because this study was conducted at a small, elite boarding school for adolescents with learning disabilities, questions regarding its external validity and adaptability to larger school districts and more complex environments are inevitable. However, it is important to note that, even though school systems invariably come in all shapes and sizes, special education programs typically represent an overall minority of students in a given school or district. It is a further limitation of the study that it is not known how many of the students at the Green School receive some form of prescription medication, but the institution does keep a core of registered nurses on staff. Another limitation to note is that the Green School gives students extra time as a modification for students taking the HRSPP and SAT-10. Thus, a further limiting factor for the proposed study is the unknown effect that this modification has on the HRSPP and SAT-10 results. Lastly, because of the use of a census sample limits the adjustment of the sample size, unless the results indicate a fairly large sample size, the study was deemed underpowered. Thus, it is a further limitation of this study that a meaningful effect size, appropriate sample size, and an adequate power setting are beyond the researcher's control.

Scope and Delimitations

The scope of this study encompasses the way in which adolescents with learning disabilities feel about themselves and any impact this may have on their academic performance. All participating students are enrolled at a small coeducational boarding school. All test participants were drawn from grades seven through twelve, and were between twelve and eighteen years of age. A further delimitation shall be that personal information that is irrelevant to the study (i.e., related to sexual orientation, socio-

economic factors, substance use, illegal behavior, medical or mental health) are outside the scope of this study.

Significance of the Study

Classroom teachers are not students' sole influence. Administrators, coaches, parents, and students' peers can all contribute to the quality of the image teenagers hold of themselves. Ravenscroft (2012) demonstrated that his can also be true among teenagers with learning disabilities. However, the factors influencing a young person's self-perception may reveal some important influences upon their social and emotional development that could be affecting their academic performance. Extant literature sources pertaining to special education students' self-perceptions and their relationship to academic performance typically include different dimensions of self-perception, without simultaneously examining different dimensions in their analyses.

Thus, possessing the knowledge of issues that can affect and even predict academic performance in populations of students with learning disabilities may enable an entire learning community to better contribute to the positive self-perceptions of these students (Ravenscroft, 2012). Furthermore, this study may elucidate and lead to the creation of practical applications, such as in-school workshops, bringing together small groups of students who work with a counselor on self-esteem building activities. These types of programs could be the key in reaching out to and teaching special needs students how to love themselves.

Promoting Positive Social Change

Studying self-perception as a predictor of academic performance in adolescents with learning disabilities also promotes positive social change. It does so by helping

students, school officials, parents, and society in general to realize that each life represents an individual with deep and complex perceptions of him/herself and the world. These individual views contribute to a world of interdependent perceptions. Thus, the way students with learning disabilities feel about themselves could not only affect their academic outcomes, but impact on the quality of life of other people as well. The scientific Law of Conservation of Mass states that matter cannot be created or destroyed. Rather, it merely changes form. Similarly, any student whose grades are consistently low and eventually drops out of high school does not just disappear. Successes and failures of all students affect society as a whole, not just immediately, but in the long term as well. Soaring crime rates and an increasing burden on public assistance are just some of the possible outcomes of continuously failing to place emphasis on the feelings of others, students in particular. Ideally, it should not take the physical sciences, or the educational science inherent within this research project, to help people understand that all human life connects in an infinite number of nexuses and thus each human life matters.

Summary

School systems are always in need of information regarding ways to improve the quality of their various educational services. Thus, research exploring the nature of and the factors contributing to self-perception, as it pertains to students, is always of critical value. Learning disabilities are becoming more prevalent and their diagnosis more efficient; therefore, any information that may help the education community better understand adolescents' self-perception is vitally important. Furthermore, elucidating a link between these students' self-perception and their academic performance provides a vital contribution to the extant body of literature on this issue. Chapter 2 will delve into

the body of theoretical literature that frames the study of self-perception and provides

evidence of its importance. Chapter 3 provides a justification for, as well as a detailed

description of, the specific quantitative approach chosen for this study.

Chapter 2: Literature Review

Background

Adolescents are navigating a difficult time in their lives when they are transitioning from childhood into adulthood and may find coping with many physical, physiological, and psychological changes difficult. Thus, they often struggle with their self-image and self-perception. In addition, worries about how their peers and other significant people in their lives perceive them may exacerbate their issues, leading to low self-confidence and sometimes depression. This, in turn, may affect their academic performance and produce a long-lasting negative impact on their lives. For students with disabilities, this is a particularly challenging time, as their special needs already make them feel different from their peers. Hence, exploring the effects of negative self-perception on this population is essential in order to ensure that their needs are met and they are provided every opportunity to fulfill their potential. It is best to approach self-perception as a multidimensional phenomenon, in relationship to academic attainment, because there seem to be various parts to the human psyche and personality. A more in-depth discussion of the self-perception epistemology is forthcoming in this chapter.

The purpose of this quantitative study is to discern if there is a significant relationship between self-perception of reading, writing, spelling, and mathematics abilities and global self-worth and students' actual academic performance as measured by SAT-10 Total Reading and Total Math scores. Participating students in grades seven through twelve (N=128), perceived intellectual ability, reading, writing, spelling, mathematics competence, and global self-worth HRSPP subscale scores were treated as predictor variables. Because the census represents six different grade levels and various

learning disabilities, maturation and selection are possible effects on the predictors of interest. According to Slaughter (2012), effects such as these should be included as modifiers within the model. Thus, participants' chronological age and specific learning disability were treated as effect modifiers. Stanford Achievement Test-10 Total Reading and Total Math scores serve as the dependent variables in a multiple regression analyses using step-wise data entry in order to highlight any significant relationship and measure its effect. The findings yielded by this study could be pivotal in helping schools create emotionally nurturing environments in which students feel appreciated and valued, and thus develop positive self-perception.

Much of the literature germane to the relationship of self-perception and academic performance among adolescents seems to involve students from several different backgrounds, ethnicities, nationalities, and levels of intellectual functioning. For example, extant literature sources pertaining to special education students' self-perceptions and their relationship to academic performance typically include different dimensions of self-perception, without simultaneously examining different dimensions in their analyses.

When literature sources are chosen for a review in a particular study, researchers tend to focus on seminal texts, which clearly address the phenomenon under investigation. Thus, in this work, the primary sources of interest were those that highlight self-perception against the background of its various stages of existence. For this purpose, the researcher accessed the following databases through the Walden University online library: ERIC, Education Research Complete, SAGE Premier, ED/IT Digital Library, Education Research Starters, and the Oxford Education Bibliographies.

The primary search terms included self-concept, self-perception, academic performance, achievement, special education, and learning disabilities. Hence, the sources reviewed in the subsequent sections was drawn from the seminal literature relating to the theoretical base, as well as literature pertaining to the above terms encompassing the last five years of research.

The Literature Gap

There is a need for more current research on self-perception and the academic performance of students with learning disabilities. Extant literature sources pertaining to special education students' self-perceptions and their relationship to academic performance typically include different dimensions of self-perception, without simultaneously examining different dimensions in their analyses. Researchers have studied components of self-perception, academic performance, and learning disabilities but more study is required to gain a better understanding of this problem area.

For example, Al-Srour and Al-Ali (2013) found a significant correlation between the participants' self-perception and their levels of achievement. Yet, the authors failed to elucidate the precise mechanisms behind the connection between high levels of self-perception and high achievement. Additionally, Baydala et al. (2009) suggested that "children's positive perceptions of their behavior may function as an academic enabler that supports academic achievement" (p. 29). They, however, pointed out that it has been historically difficult to assess the factors contributing to the academic success of aboriginal students in Australia. Thus, finding out more about how aboriginal children feel about themselves and how this may correlate with academic performance is necessary if they are to achieve their full potential. Nonetheless, their research did

highlight differences in life science and physical science achievement scores, along with a difference in 8-year-old students' interest in science along gender lines. Clearly, the age of the student is a critical element to consider when determining what, if any, relationships exist between self-perception and academic performance. Therefore, age and other delimitations of this dissertation's research are described under the appropriate section of Chapter 1. In a recent study, Loose, Regner, Morin, and Dumas (2012) attempted to show "how academic discounting and devaluing relate to global self-esteem, achievement goals, and grades" (p. 713). Their findings indicated that adolescent student strategies for dealing with academic stress, such as devaluating and discounting academic-related tasks, affect their self-esteem and ultimately their academic performance. Yet, a gap in the extant knowledge remains when it comes to the link between the self-perception of students with learning disabilities and their academic performance.

Students with learning disabilities could present an entirely new frame for self-perception and a possible relationship with academic performance. Thus, this study is designed to elucidate these types of relationships and answer the research question: What is the relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities?

Figure 1 illustrates the Rhodes (2015) Self-Perception Process and is the basis for the review of literature starting from inside the individual looking out and interacting

with the world around him/her. This particular sequence starts by defining what an individual's sense of self and self-perception is. This is followed by a discussion on the importance of viewing self-perception within the context of human systems and the effects that the unconscious mind may have on the conscious self during perception. Then self-perception, in the context of human development, is examined, followed by an exploration of assertions involving self-perception and human adaptation, in order to clarify the picture of self-perception. The discourse also reflects on the task of understanding self-perception and the role that knowledge and understanding play within the individual's concept of self. Furthermore, linking self-perception with human will and pragmatics creates a broader view of the topic.

The review continues with the exploration of the role of communication, which then transitions into a survey of literature sources that focused on self-perception and intelligence.
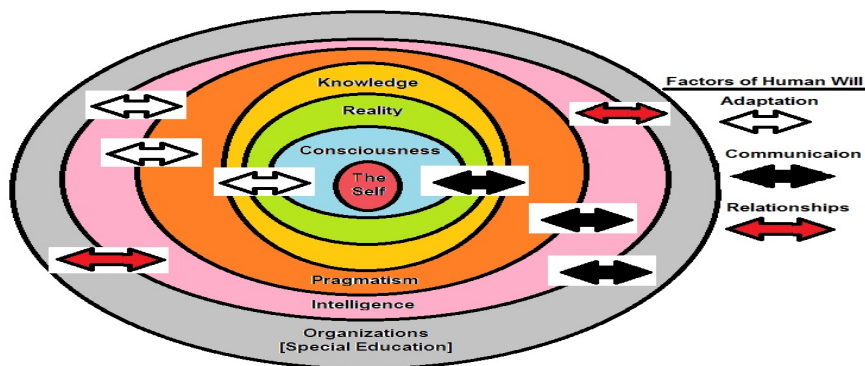
Figure 1. Self-perception process.

Next, self-perception comes into view within the context of relationships. This concept of self-perception operating inside various paradigms of interpersonal configurations may also be seen within the framework of a system. Thus, notions about

self-perception within a system may also morph into ideas about self-perception within organizations. Finally, this brings the lens of self-perception to bear on the special education system, and in this context, extant research conducted on self-perception in the educational context, self-perception and academic performance, and self-perception's impact on students with learning disabilities. The review culminates with the exploration of the role the Harter Self-Perception Profile plays within ongoing self-perception educational research projects.

Seminal Self-Perception Theory

Defining Self Perception

James divided the self into four interconnected parts—material, social, spiritual, and ego (1890/1950). He further distinguished between the knower, or *I-self,* and the object, or *me-self*. According to this view, the *I-self* does the activity and the "me-self" is the recipient of any activity. Cooley (1901/2002), on the other hand, stated that the self is constructed from what an individual imagines others think about them. He went on to say, "In its more complex forms, such as are expressed by 'I' in conversation and literature, it is a social sentiment, or type of sentiments, defined and developed by intercourse" (p. 192). This view lends much to the idea of self-perception. Similarly, Harter (1999) found that the self should be described and defined via operators, in which an individual might use to recognize who he/she is. In other words, some specific terms should be used to define one's consciousness. Thus, she claimed that "The terms self-representations, self-perceptions, and self-descriptions will be used interchangeably" (p. 3). Harter also used the terms, "self-esteem" and "self-worth" in the same manner (p. 5). According to these authors, the self should be perceived as an introspective and

metacognitive entity, as well as a social construct. These two views of the self-emerging from within and from the outside seem to have a great deal of influence on how students view themselves using those two perspectives. The same idea was presented in Fredrickson and Jacobs (2001). They felt that students with learning disabilities who are educated in the same learning groups or environments display a feeling of great social acceptance and self-worth. In addition, in a study conducted by Award (2007), examining the predictive power of ethnicity for academic performance, the author found that "academic self-perception" was the most powerful variable (p. 201).

Although the two previously mentioned researchers put forth similar ideas about viewing the self as an entity expanding outward from the individual, this then leads to the issue of identifying the key influences that seem to play the biggest role in forming a person's view of self. With this goal in mind, Barber and Mueller (2011) offer evidence supporting the assertion that "twice exceptional" students with learning disabilities who also possess a very high degree of academic functioning, can have very different views and subsequent interpretation of the "LD" and "Gifted" monikers (p. 117). Furthermore, Frances (2013) reported that "when pediatric diagnoses are carelessly applied, gifted children are frequently mislabeled with ADHD, autistic, depressive, or bipolar disorders. Yet, sometimes being gifted effectively hides these same conditions" (p. 1). Therefore, some children who are indeed gifted, are mislabeled with learning disorders and even medicated for mental health issues that do not apply to them. Thus, these researchers further help to identify the key influences that seem to play the biggest role in forming a person's view of self.

However, research has also pointed out that there are almost certainly affective connotations associated with being labeled as a person possessing some type of disability. This may be due to the affective connotations associated with being called anything other than normal. Findings of a recent Spanish study conducted by Ferrando et al. (2010) support this assertion by pointing to the ability to process various reactions and feelings, or emotional intelligence, as being a relevant influence on students' self-perception. Ferrando et al. (2010) strongly asserts that emotional factors influence the way a student may perceive the world, thereby making the case that any research pertaining to self-perception should focus on how a student feels about themselves—their global self-concept.

Self-Perception and Consciousness

It is important to conceptualize the individual human being, and self-perception, as a system and apparatus comprising many interdependent and interactive entities. William James (1890/1950) stated:

> Each human mind's appearance on this earth is conditioned upon the integrity of the body with which it belongs, upon the treatment which that body gets from others, and upon the spiritual dispositions which use it as their tool, and lead it either towards longevity or to destruction. (p. 323)

Specifically, Freud was concerned with the effects of the various systems on the human brain and its subsequent psychic composition. Sigmund Freud's theories of consciousness bring to light several thought-provoking treatises concerning the division of the human conscious mind. Similar to Freud's ideas, Bell et al. (2010) elucidated the

impacts of "teachers' perceptions of how their students experience stigma" on their students (p. 187). Bell et al. (2010) remarked on the significant difference in special education teachers' tendency to be much more consciously aware and predicting their students' perceptions of any academic stigmas, than their non-special education counterparts (2010). This is similar to Freud's assertions about the important role the unconscious mind can play in forming individual's sense of self, wellbeing, and even perceived abilities.

Freud (1900/1998) posited that the functions of perception were fed by stimulation from the senses. In his view, the human brain automatically categorizes the data collected by the receptors using unique idiosyncratic parts of the individual human mind. The same logic seems to be evidenced in Hannah & Shore (2008) who felt that their research participants were clearly stigmatized by their mindset or self-view of their "students with learning disabilities" label. These unique aspects of the individual are what constitute, in large part, an individual's psychic schema, or a lens through which a person views the world. Even a smell or a sound can be instantaneously related or extrapolated and correlated with the best suited phenomenon that exists in the mind from previous experiences. Thus, it is not surprising that it can lead to a contrived and prescribed status of function and capability. For Freud, the self was inevitably and irrevocably connected with the body, meaning an individual is affected by the way they feel. What then becomes necessary is finding out more about any connections between the way students feel about themselves and their academic performance.

Self-Perception and Reality

Self-perception does not merely exist in some intangible dream world. Rather, it operates within an environment where a person has no choice but to limit his/her actions to social ceilings. Thus, the self appears to also be bound to and limited by social ceilings. Erik Erikson (1982/1998) discussed the physiological side of the "self" coin we know as humanity.

In order to frame Erikson's (1982/1998) ideas about self-perception and human development, it is important to first understand his view of reality. Erikson presented reality as an entity comprised of three interrelated parts—human instinct, phenomenological reassurance, and the big picture. According to this premise, human instinct includes all actions, the capacity for action, and their direction by the ego. Thus, the development of the ego is also the way humans learn to control their innate need to act out according to the desires of their egos. Erikson's big picture, on the other hand, can be defined as the need for humans to contextualize their perceptions. This is similar to finding different puzzle pieces, but putting them together according to the picture on the outside of the box. These examples of Erikson's view of reality make his stages of human development clearer and easier to understand.

Erikson (1982/1998) recognized eight stages of human development, namely Infancy, Early Childhood, Play Age, School Age, Adolescence, Young Adulthood, Adulthood, and Old Age. Understanding their characteristics and interconnectedness is paramount to describing the self as a development and physiological progression. Erikson asserted that the physical processes are connected to both the development of personality and the social power of organizations. He believed that the self and society

are inexorably connected, enabling the development of one to manifest simultaneously with the other. Furthermore, in his view, humanity can be broken down to three base processes, namely biological organization (Soma), the self-experience (Psyche), and the organization of culture (Ethos). Even though these three organizations inherent to humanity, according to Erikson, all contribute to the human experiences, each one should be examined by using the most appropriate means.

Erikson further attributed "tension," "anxiety," and "panic" to the above levels of organization as cognitive byproducts. Quite often, these are the phenomena that medical doctors, psychologists, and sociologists study. For example, the same line of thinking is evidenced in Gent et al. (2002) as they explain the relationships between the development of the ego and the self, and their relationship to familial deafness. Erikson highlighted infancy, adolescence, and adulthood as being of particular interest. Thus, it is not surprising that Erikson took great care in elaborating on the physiological, psychological, and social ties that connected these three key stages.

In discussing self-perception, Erikson defined hope as a conflict between the need for basic trust and the antithetical formation of basic mistrust in the infancy stage of human development. Infants often cry when they are held by strangers, left alone, or deprived of a need, such as their mother's attention of a warm bottle of formula. Erikson further defined this stage of human development as being focused on "hope," as its key strength. Hope is centered on expectations and desires, which conctitute the same idea put forward in Chiang et al. (2012).

Chiang et al. (2012) show that assistive technology, such as Kurzweil 3000, may indeed help a student through academic tasks, but may do very little to enhance their

learning adjustment or academic self-perception. Kurzweil 3000 is a computer-based software package that will read texts and even websites out loud for students. However, similar to Erikson's ideas about the way hope is a factor of human development, Chiang et al. (2012) demonstrates that helping students to complete academic tasks are no substitute for self-concept. Students may still "hope" to feel better about themselves as persons, which could have an impact on how they perform academically.

Self-Perception and Adaptation

Adaptation appears to be crucial when it comes to an individual maintaining and sustaining a sense of self and when considering self-perception. In his literary classic, *The Origin of Species*, Charles Darwin (1859/1999) pointed out that evolution is not a free-ranging phenomenon; rather, it is purposeful, as so too is the development of self-perception.

Darwin suggested that the sheer volume of individuals inexorably pits them against each other in a struggle for survival. Consequently, struggle or conflict becomes a natural occurrence inherent between two or more individuals. Furthermore, Darwin asserted that, as species gradually change in structure, over time, they exhibit the attributes that will better prepare them for the ensuing struggle amongst their peers. This "natural selection," as Darwin noted, is a strategy employed by all creatures as a means of survival (p. 52). The same line of thinking can be found in Muldoon and Trew (2000), as they brought Darwin's thought into the modern world by examining the plight of the psyches of young people in Northern Ireland. Muldoon and Trew explored different facets of the self-perceptions of adolescents in Northern Ireland and found that they impacted their behavior in school.

Even though Muldoon and Trew (2000) did not go into depth about how their participants' behavior was impacted, their study did highlight a connection between self-perception and school. This may be very much the same as Darwin's (1859/1999) further suggestion about the ubiquity of humans and their will to constantly adapt to their environment. This could mean that adaptation is an integral part of self-perception.

Applying this logic to adolescents, a highly social group, Darwin's assertions imply that natural selection will transform the basic framework of the self in order to better sustain the collective. This same idea can be found in Cho et al. (2010) as they discuss the various classroom ecological factors that may contribute to what is taught. Cho et al. (2010) find that "special educators who taught in resource rooms plus self-contained rooms plus general education classrooms tended to place more value on teaching self-determination than did those who taught only in general education classrooms" (p. 27).

The same ideas that Darwin had about adaptation may be evidenced by the teacher participants in Cho et al. (2010), in which they helped students to process their academic loads in varying environments. The teacher participants featured in Cho et al. (2010) could have seen the need for self-determination skills and strategies to be imparted to their students, and thus proceeded to teach this skill set. Darwin posited that natural selection is the perpetual genetic retention of functionally advantageous qualities, along with rejection of those qualities that provide less or no advantage to their hosts. Cho et al. (2010) put forth the same type of thinking by asserting that self-determination could be a self-perceived adaptation that is deemed necessary for students with learning disabilities and their teachers to feel better about themselves and their tasks.

Self-Perception and Knowledge

 Jung (1957/1990) suggested the development of self-perception is a dichotomy between knowledge and understanding. Even though knowledge and understanding have a discernable interconnectedness, in order to manage conflict, dual directional thinking—whereby it is possible to do one thing without losing sight of another—seems to be the best strategy. In this respect, Jung recognized the necessity for humans to apply their knowledge correctly or most appropriately in order to gain specific ends or outcomes. Jung believed that the crux of human development is the development of the self and its ability to perceive (1957/1990). Clearly, Jung felt that self-perception is not just a mere quantum of images and other data representing one human being. The same line of thinking can be found in Cohan (2011), who reported that "data analysis indicated that children enjoyed the responsive letter writing process and that their self-perceptions as writers and their writing skills improved" (p. 39).

 This research supports the argument that Jung appeared to make about the individual being involved in forming self-perception, along with the activity, environment, and associated outcomes. Cohan (2011) was one of the first studies that demonstrate that activity, environment, and associated outcomes all play a big part in forming the relationship between knowledge and self-perception. For example, in Chohan (2011), the letter writing activity and the way students felt about it supported Jung's assertion that the self, and its perceptions, are comprised of several different parts that work together inside a person's mind. Thus, what it means to be an individual is composed of the mind, which includes emotions and feelings. On this, Jung (1957/1990) remarked that, "Most people confuse self-knowledge with knowledge of their

consciousness. . ." (p. 5). Jung went on to explain that most knowledge that people claim stems from social interactions and the impressions constructed by perceiving these actions. Thus, the unconscious mind engages in the same construction activities as the conscious mind and is equally important in describing the process portion of the human psyche.

Therefore, the research found in Cohan's (2011) study demonstrates that letter writing for students was not just merely an isolated activity; it was indeed a process connected to a solid knowledge base in the perceptive minds of the students involved. The students knew and believed they could indeed write.

Self-Perception and Human Will

According to Jung, to will something is to be human. However, what does human will consist of? Why is it so important to the development of self-perception? Where does it come from? Immanuel Kant (1785/1988) believed that the will of the self is rationally sublime and ubiquitous. Thus, self-perception may be perceived as an extension of the human will. Still, it is important to keep in mind that self-perception may vary among people and even across different groups.

Kant (1785/1988) described the positioning of the human will as always operating between reasoning and the material. He further noted that feeling, tasting, seeing, and experiencing could reduce to incomprehensible and meaningless phantasms without considering the phenomena or conditions necessary to characterize these impulses and bring them into being. Individual human will defines and creates reality for the psyche. According to Kant, humans could not function without it and attaining prudence seems to be the root of self-perception and motivation. For example, learning how to write for the

special education student participants in Cohan (2011) may have contributed to their will to be better writers.

Kant (1785/1988) suggested that, even though individuals take in only pieces of the external world, they still define themselves subjectively. Thus, in doing so, an individual's self cannot express his/her will without addressing his/her sense of duty first. According to Kant (1785/1988), the governing dynamic of all individual human will is the self's duty to pursue happiness, as the ultimate subjective goal or desired condition. Thus, Kant felt that human will is more clearly evidenced by the variation and diversity found within human activity. The same line of thinking was put forth in Cuenca-Carlino and Mustian (2013) as they heralded the importance of special education teachers implementing their own research and intervention methods. The special education participants within Cuenca-Carlino's (2013) study launched their own writing intervention program within their special education. This was one of the first classroom based studies that recorded gains in writing volume and students' self-perception of their writing competency (p. 14). Again, this is another example of Kant's ideas on prudence and pragmatics as being essential for the manifestation of human will. Similarly, Kant (1785/1988) held the view that happiness is a ubiquitous end among all rational beings, making prudence and pragmatics very individualized concepts. Regarding students with learning disabilities, it may then be prudent for students to create a reality for themselves that involves attaining happiness. Furthermore, what makes students happy is probably a dynamic part of their development process. However, what relationship does a student's happiness play with regard to their academic performance?

Self-Perception and Pragmatism

The development of the self-perception for James (1907/2000) also focuses on the link between self-perception and action. James's system is based on the application of human praxis and its subsequent results. In this context, trial, error, and success are important pieces in the human developmental puzzle. Thus, pragmatism can be seen as the act of individuals exhibiting behavior, or seeking out the resources that are known or believed to give them the best chance to obtain what they want. This may point to the fact that self-perception may indeed be bathed in pragmatic discourse, where "What should I do?" is balanced with "What can I do?"

James (1907/2000) was careful to start his explanation of pragmatism with the examination of its Greek root, "prayla," which means action. This led to the introduction of the word practice, practical, and finally pragmatism into Greek, Latin, and English lexicons. Thus, pragmatism is a state of being practical and practice, both of which are focused on action. Specifically, James used pragmatism as a method of reaching understanding through specific conceptions of actions and corresponding results. The perception of benefits and their subsequent post-action status sublimely guides all human understanding, according to James (1907/2000). Given this notion, what one person might view as a dilemma or contradiction might simultaneously become another person's means to an end. Individuals might perceive a means to control particular set of conditions, normally referred to as a solution, in completely different manners.

James further noted that pragmatism is merely another appendage of truth classified by the tasks it is performing. Similar ideas about pragmatism were put forward in Fareo (2011), who was one of the first researchers to state that "there must be a special

curriculum specifically designed by educators to meet the need of the students with special needs" (p. 504). His study provided evidence that supported the idea of creating a separate curriculum designed specifically for students with learning disabilities is a pragmatic approach to accommodate students within the special education context. Thus, the conclusions found in Fareo (2011) support the continued use of Individual Education Plans (IEP's) within the field of special education.

According to James (1907/2000), pragmatism comes to the rescue in this moment of absolute truth's failure, as believing something to be true simultaneously means believing that the same thing is also good. The assessment of something as good or bad is also contingent on its benefit and practicality, which has become a common theme throughout human development and the ever-changing sense of the self. James took this concept further by asserting that the entire universe becomes negotiable and manageable for humans due to pragmatism. "Whatever works best" is a strategy that is dripping with pragmatism and is used by individuals in many circumstances (p. 40). Thereby, truth becomes what is best for a particular person, which is further supported in Faero (2011) and the success his participants had when creating and using their own curricula to meet the needs of their students.

Fareo (2011) highlighted the need for a pragmatic change within the context of how special education programs are delivered. James explained this eloquently, stating that conception in the human mind means, "guiding it through a context supplied by the world" (p. 143). In the end, students with learning disabilities are responsible for forming their own pragmatics and their actions. Yet, the feelings that students with special needs associate with their pragmatic activities have yet to be closely examined.

Self-Perception and Communication

Communication is also an important part of the development of the self-perception process. Vygotsky (1934/1978) developed the theory of human communication and its impacts on the development of the self, claiming that communication plays a key role in self-perception.

According to Vygotsky, human use of speech represents a unique ability to develop higher psychological processes. Not only does speech help humans interact and further explore their world, they are also able to explore within the context of their own psyches. Gage (2013) demonstrates the same line of thinking by highlighting the important role communication, within the individual students, and among special education teachers, plays in bringing special education needs to the forefront. Participants in Gage (2013) provided evidence that students with learning disabilities are using speech externally and internally, allowing them to contemplate upon their academic tasks before and after initiating them.

Vygotsky (1934/1978) felt that the nexus of human action and speech leads to the road to human intellectual development. Thus, the importance lies not just in what humans do or say; it is also essential to understand the underlying reasons for actions and communication. For example, the Gage study (2013) provided evidence that shows that "teachers' ability to identify students that both manifest internalizing behaviours and self-report feelings of loneliness, and an inability to find a friend" was linked strongly with the academic performance within these classrooms (p. 142). Gage (2013) provided some support to the idea that the self-perceptive ability to communicate becomes a central factor in the way special education needs are articulated.

Vygotsky (1934/1978) believed that speech, perception, and action work together as a seamless system dedicated to problem solving. This led Vygotsky to believe that humans communicate their desires and will of the self by creating signs, symbols, and monuments in order to help them remember what they did, how they did it, and why they did it.

Self-Perception and Intelligence

Though it is widely accepted that human interactions play a part in the development of self-perception, understanding how the self is able to manifest its will within the concept of those interactions is equally as important. Jean Piaget (1951/2001) asserted there is an enduring relationship between the self, will, and intelligence.

According to Piaget, humans and their environment interact with one another, constantly seeking balance due to a continuous stream of activity exhibited by both entities. This give and take, push and pull matrix of interaction, involves all living organisms and their subsequent environments. Piaget believed that humans, being cognizant of their ends and means, constantly adjust their goals and actions accordingly. Most human beings are aware of themselves, both spatially and temporally; thus, human actions are said to have purpose, meaning, and even intelligence. Similarly, Huck et al. (2010) introduced evidence to the field of special education that "perceived cognitive competence was not matched by academic performance but there appeared to be a closer match between perceived peer acceptance and social status" (p. 152). Huck et al. (2010) demonstrated the power of self-perception as a measure of how well off socially, and in this case, how intelligent students feel they are. This is likely due to the link between intelligence and perception, thus both are tied to all the variables that accompany it.

Piaget (1951/2001) claimed that intelligence is based on knowledge and thus provides structure for feelings and emotions affecting an individual's assessment of value of the proposed activity. When a phenomenon is conceived or processed in one's mind, this helps create his/her sense of reality and determines both one's goals and the means of achieving them.

Piaget (1951/2001) insisted that intelligence is a mental instrument that humans use to optimize the outcomes of their actions in relation to their environment. He further expounded upon his view of intelligence by proclaiming that intelligence is what frees human actions from constraining environmental conditions. Piaget exemplified this by saying that even the best-made prisons in a given penal society must constantly be on guard for the possibility of prisoner escapes. Furthermore, according to Piaget, intelligence contains its own monuments in the form of organizations and institutions that symbolize valued actions and thoughts.

Piaget likened the relationship between perception and intelligence to the process of capturing an image on film. In this analogy, the quality of a photograph becomes the function of the probability of photons and silver salts colliding and leaving impressions on the photographic plates. The more intense the impression is, the clearer the photo will be. Huck et al. (2010) demonstrated the power that a student's feelings of self-worth can have over special education students' self-perceptions, but failed to report what impact a student's sense of self-worth may have on their academic performance.

Self-Perceptions and Relationships

Given the connection among human will, self-perception, and intelligence, it is necessary to take into account the myriad of relationships the self and self-perceiving

individuals may enter into, as these interactions further contribute to the development of the self. According to Friedrich Nietzsche (1887/1967), self-perception is born of intense human interactions.

Nietzsche believed that the power elite hold place precedence over all subsequent inter-human configurations by classifying all actions and simultaneous phenomena as either good or bad. Nietzsche elaborated on this view by stating that, by directing and casting things and other people as good or bad, the elites' dialectical power position is assured and becomes a ubiquitous assumption for others until this power configuration changes and the previous elite status becomes inert for the incumbent. Joffey and Nippold (2012) supported the assertion that perceived relationship status can translate to serious emotional reactions from students in a classroom. Just as Nietzsche further asserted that the words "good" and "bad" imply a sense of class distinction, with good being associated with the divine and bad correlating to the unimportant or unnecessary (pp. 27-28), students also infer a sense of what is good and bad.

Joffey and Nippold (2012) demonstrated that this type of configuration was an important part of their research design, in that they examined how students with special needs felt about the academic assessments they were being exposed to. This is similar to Nietzsche's (1887/1967) description of two distinct classes—upper class and lower class, and the effects the knowledge of being part of one of these groups had on a person. Nietzsche (1887/1967) believed that being in the upper class creates feelings of superiority and being part of the lower class creates feelings of oppression. Student participants in Joffey and Nippold (2012) demonstrated feelings about their particular assessments according to their perception of themselves as having learning disabilities.

Joffey and Nippold went on to assert that "in addition to standardized assessments, non-standardized measures that target the perspectives of young people with language difficulties should be included" (p. 142).

The perspectives of the participants in Joffey and Nippold (2012) may have contained significant and measurable effects linked to the assessments. If these social and emotional factors are not accounted for within an academic setting, a potentially important part of the student as a whole is missing. The researchers went on to say that "the perspectives of their teachers, peers, parents, employers, and any others whose views are important to the young person should also be considered" (p. 143). The students' perceptions, morals, feelings, etc., become paramount in the context of providing them with an appropriate and accurate plan of action. The relationships students have between the people in their lives are directly contributed to their self-perception schema.

Self-Perception and Systems

Though the self and its perceptions may be thought of as being sublime, Nietzsche perceived the self and self-perception as being interchangeable and transient parts in relationships. This concept may be further expounded upon by viewing the self as part of a larger living scheme. Ludwig Von Bertalanffy (1968), considered the father of such thinking, was arguably the first systems theorist to emerge from the West. In his book, *General System Theory*, he captured and described a theoretical view of the world. His work essentially attempts to argue that things in mankind's universe could actually be best described, both in state and origin, as systems and the creation of systems. This essential notion drives his systemic theoretical views on organizational development. Placing self-perceptions into the context of a system may become increasingly important

in education. Bertalanffy made it clear that an organization is not just some stagnant fixture sucking in positive energy and expelling its byproducts. He asserted that organizations are in a continual oscillation, which permits their various components to encounter and function with each other according to the "the law of instability" (p. 48). Thus, schools' functions within a given system are what give them a systemic imprint without which their isolated scrutiny would be insufficient as a source for understanding.

According to Bertalanffy, organizations are indeed made up of individuals and it is the uniqueness of the human mind that makes organizations extremely successful open systems. For example, in Jones and Hensley (2012), students in self-contained classrooms perceived their classmates as being more supportive than those found in resource rooms. The students perceived themselves as part of a system. In this case, the system is a special education classroom. The human mind, as a part of an open system itself, is capable of creating other open systems, known as organizations. These entities, just as the humans who sired them, respond to conditioning and cultural influences. Again, Hensley and Jones (2012) reported that on average, students within self-contained classrooms perceived higher feelings of "psychological empowerment, self-regulation, self-realization, and autonomy" than students within resource rooms (p. 44). Obviously, these systems and the perceptions they bear are important to students. However, it is important to note that this does not imply that these classrooms, schools, or any other organizations develop an innate tendency to be any more capricious than other aberrations of the human mind. Variation seems to be constant.

Self-Perceptions and Organizations

In his book, *The Systems View of the World*, Laszlo (1972) asserted that a more holistic view of the world is needed. He criticized the dogma entailed in the Western philosophical stance, whereby the human mind is perceived as merely an instrument of process and a vessel used for storage. Yes, society is composed of the highly developed open systems, the minds of humans that comprise it. However, perception is not an isolated process and the same can be said for the development of the self. Humans interact and build network configurations of relationships. For example, Zola (2011) reports that "within elementary schools with high poverty and high minority populations, a significant inverse correlation between the teachers' perceptions and the school principal's self-perception of how his or her leadership responsibilities influence the implementation of the school-wide Response to Intervention" and its success (p. 7). Thus, even the self-perceptions of the personnel in charge of a learning system can positively or negatively affect this system.

Furthermore, the reality that humans engage in everyday routines is far too rich of a substance to be fully understood and manipulated by the rudiments of classical Western deductive and inductive reasoning. For example, King (2012) reported that "Overnight suspension, gender, and recommendation for expulsion were each significant predictors of at least one variable associated with students' affect toward school" (p. 115). In this example, students are forming perceptions of school, as an entire institutional organization, in a very negative light based on actions that place them out of school. It is highly unlikely that humans consciously piecemeal their way through their days,

examining and inferring the underlying meaning of organizations bit by bit, but each piece does add up to a whole; a larger overall perception.

Laszlo (1972) did not believe that the player on a sports team could be isolated, examined, and understood without considering the team in its entirety. Similarly, he would not agree that the company as a whole could be inferred by interviewing and examining a single employee of a corporation. Laszlo seemed to believe that the process of perception that generates the reality stream for humans is a much more complex and dynamic operation than the characteristics of classical methods of understanding are capable of grasping. He went on to assert that the typical laws of physics are unable to account for the entire set of complex interactions associated with living organisms. Furthermore, the laws that are common to our time seem to fail when explaining various phenomena. Rather, it seems that they merely express specific instances, which take place when certain variables and/or conditions are present. In the case of the students in King's (2012) study, it was the type of disciplinary action that students found themselves subjected to that became the catalyst of perception. Self-perceptions within any system or organization may be seen as possessing the freedom to interact with one another. This would appear to also be true for the way students communicate with and adapt to special education organizations.

Self-Perception and Special Education

Schools, classrooms, and homes are all examples of systems in which the self is fed positive and negative information and images every day. In their book, *Learners with Disabilities*, Shea and Bauer (1994) highlighted some theoretical concepts within the field of special education. In addition to recommending that school systems be

examined, the authors clearly demonstrated their belief that it truly does "take an entire village to raise a child." Thus, the entire sphere of influence and external membranes that encompass special education is the focus of this immensely valuable and informative book.

Shea and Bauer (1994) posited that, in the educational context, ecology is a unitary system involving the student, their family unit, schools, and their respective neighborhoods. From this perspective, the authors appreciate and understand the many different and complex sets of phenomenological relationships that exist within a system's theoretical landscape. They underscored this point by using the term "reciprocal association" (p. 7). This concept can be understood as implying that the self and the environment are in a constant state of interaction. Koster et al. (2010) reports that "students with special needs have fewer interactions with classmates, have more interactions with the teacher, and are less accepted than students without special needs" (p. 59). Koster et al. (2010) supports Shea and Bauer (1994) in that both sets of researchers seem to believe that the growth of the student, as well as his/her environment, should be the focus of special education. The authors claimed that not only the students grow, change, and adapt, but so does the environment as a whole. Of particular importance for the present study are the authors' thoughts on the various systemic spheres that they believe play a major role in influencing and affecting students with exceptionalities.

In their work, Shea and Bauer (1994) explored a number of perceptions and thoughts related to graduates with learning disabilities and other special needs, as they relate to the workforce. Furthermore, they pointed out the ironic disposition of facts

relating to persons with disabilities and their employment status. They drew attention to another sphere of influence that could potentially affect special education students—the stigma placed on their expectations and capabilities and their perceived inferiority relative to those of their peers. The authors posited that this stigma becomes even more convoluted by inequitable treatment of students based on their ethnicity.

Lastly, students' individual idiosyncrasies, such as physical or mental impairments, must also be considered when attempting to adopt a systemic approach to special education. In that respect, Shea and Bauer (1994) pointed out that it is critically important to find out if the student is capable of doing the coursework in the class, even if this requires some intermittent assistance from a resource teacher. The authors also highlighted the importance of the interaction that takes place between the self, the student, and his/her environment.

Koster et al. (2010) made the point that inclusion is not always the best answer when it comes to students with learning disabilities. "Inclusion is promoted because it is assumed to be positive for students with special needs, but we know that for some of these students inclusion might result in negative outcomes e.g., loneliness, rejection (2010, p. 71). Shea and Bauer (1994) perceived this relationship as one of the most important systemic principles that must be fully understood by a special education system. One would find it easy to agree with Shea and Bauer on the importance of remembering that the special education student is part of the pattern, structure, and process of a specific system—the special education system. In this context, the self must also receive its due attention, along with all of its perceptions, and thus self-perception.

Seminal Self-Perception Theoretical Summary

Self-perception has been presented as a multidimensional construct. The epistemological highlights of these dimensions have been elaborated on in great detail. Figure 2, Self-Perception Process, illustrates the dimensional constructs as starting from within the human mind and extending outward into various interlocking nexuses of human activity. Thus, the need for more research into the aspects of self-perception that may affect academic performance is more clearly elucidated.

The Self-Perception Process II, as shown in Figure 2, illustrates the formation of consciousness as evidenced via the work of Cooley (1901/2002), James (1890/1950), and Freud (1900/1998). In this manner, consciousness is shown to form within the inner core of the self.
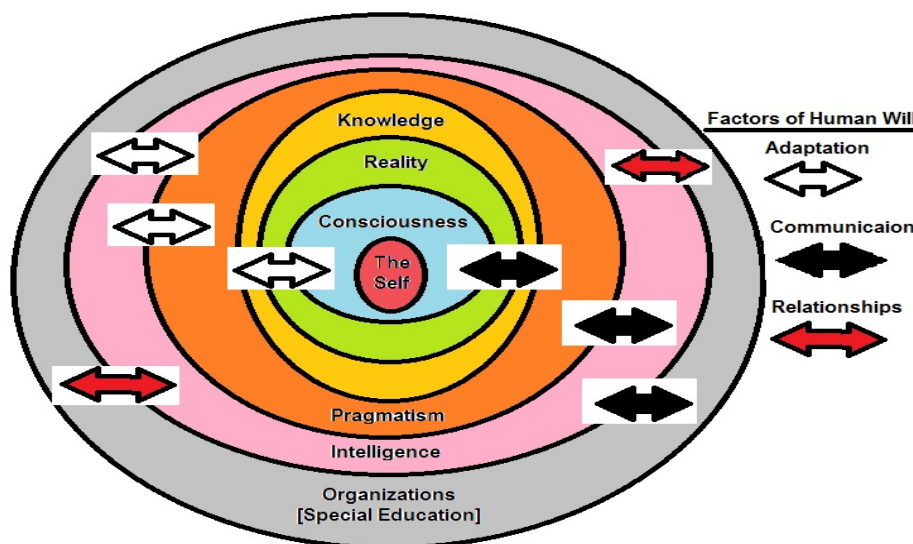
Figure 2. Self-Perception Process II

The capacity for conscious awareness lies within the core of an individual. Vygotsky (1934/1978) and Darwin (1859/1999) discussed how consciousness feeds

communication and drives adaption to the realities that encompasses and provides

boundaries for perception. Thus, communication and adaption are conceptualized as

factors of human will, which Kant (1785/1988) posited in his writings. The constant

process of communication and adaptation build a base of knowledge overtime. Jung

(1957/1990) philosophized about how knowledge is dynamically transformed into

pragmatism and may be viewed as the platform for what can be seen as human

intelligence, which were discussed in Piaget's (1951/2001) body of work.

Nietzsche (1887/1967), Bertalanffy (1968), and Laszlo (1972) believed that

individuals may pragmatically and intelligently adapt to their realities by forming

relationships with other individuals, systems, and organization. Special education, as

discussed in Shea and Bauer (1994) therefore, can be conceptualized as yet another layer

of human connectivity that is both affected by and affects self-perception. Thus, it can be

argued that identifying aspects of self-perception that have a significant relationship with

academic performance and measurable of effects on special needs populations is quite

important.

<div align="center">**Researching Self-Perception and Academic Performance**</div>

Student Impact

The impact of self-perception on students can be analyzed through a breadth of

foci. This dissertation proposal intends to use students' self-perception of reading,

writing, spelling, and mathematics competence and global self-worth, as measured by the

Harter-Renick Self-Perception Profile in its research model. From adaptation to

pragmatics, this area of research highlights the need for self-perception to remain a

prominent topic of inquiry. For example, Muldoon and Trew (2000) pointed to the

formation of "psychosocial identities" as being the efforts adolescents in Northern Ireland employ in order to adapt to an extreme environment fraught with strict and even life threatening consequences for failing to do so. In Northern Ireland, according to the authors, the failure to develop this capacity to adapt would be unacceptable. Similarly, Gent et al. (2002) conducted a study examining self-concept and ego developments in deaf adolescents. These researchers examined groups of deaf teens to make inferences on their familial deafness patterns.

The Gent et al. (2002) investigation focused on self-perception and its relationship with the ego developments, as these are formed during childhood, which brings considerable familial influence to bear. Portes et al. (2005) also explored this type of pragmatic application by examining the way in which children adjust during parental divorce.   However, Portes et al. (2005) advanced the relevancy of finding out more about pragmatics and feelings with their study of strategies young people adopted in order to adjust to divorce. Portes et al. (2005) demonstrated that their participants' coping strategies varied according to several different factors, including demographic phenomena. In a more recent study, Lahijanian et al. (2012) provided a much more specific look at the "effectiveness of cognitive-behavioral therapy on the improvement of self-perception in gifted students with learning disorders" (p. 1101). This important advancement in special education research highlights the need to account for students' emotional needs within the learning environment.

Frederickson and Jacobs (2001) stated that "the notion of self-perception may encompass different constructs including: self-recognition, self-description, self-evaluation, and self-motivation" (p. 402). However, Fredrickson and Jacobs (2001) did

not provide a possible list of ingredients that collectively represent a student's self-perception. In that respect, Alves-Martins et al. (2002) indicated that "there are significant differences between the self-esteem enjoyed by successful and unsuccessful students in the seventh grade; such differences disappear in the eighth and ninth grades" (p. 34). These findings seem to correspond with evidence found in Gent et al. (2002) and Alves-Martins et al. (2002) then become some of the first special education researchers that present findings revealing "success-related differences in domain-specific self-evaluation" (p. 51).

There are also bodies of research that place self-perception into a matrix comprising several other variables with factors to measure its possible effects and influences. For example, Montague et al. (2008) asserted that adolescent depression symptoms diminish over time, as adolescent self-perception increases. This important evidence of the feelings of adolescents playing a role in the self-perception process is further corroborated by Pina et al. (2008) who demonstrated that Hispanic students, who were retained at their grade levels, exhibited a greater number of symptoms of depression and lower self-perception than those who were not. Pina et al. (2008) is one of the only studies to also point out the importance of identifying psychological stressors and cultural idiosyncrasies being included in the student assessment matrix. Lackayei and Margalit (2006) conducted a study comparing self-perceptions and effort among adolescents with learning disabilities and those of other adolescent groups. The authors found that "negative moods" or lack of "self-efficacy" seemed to be prominent among the students with learning disabilities (p. 444). Furthermore, it has been well documented, as evidenced in Hannah and Shore (2008), that special education students can carry

impacting stigmas stemming from their mindset or self-view of possessing learning disabilities. Furthermore, ways to mitigate stigmas and other negative self-perceptions students carried were continuously researched. For example, in a study focusing on the use of meditation to lessen the anxiety and improve the academic performance of students with learning disabilities, Beauchemin et al. (2008) noted that meditation and relaxation were linked with relieving student anxiety. More recently, Lahijanian (2012) reported that "gifted students with learning disorders have some problems in their self-perceptions, which may improve with exposure to cognitive-behavioral therapy" (p. 1100).

The studies reviewed above effectively illustrate the connections between self-perception and several variables pertaining to students with disabilities. Underscoring the need for emphasis on self-perception research and education, Wilson et al. (2014) stated that "a student's confidence in his or her abilities in academic settings has an influence on how he or she plans for the future" (p. 113). Similarly, according to Obilor (2012), "It is clear that self-perception becomes more empirically sensitive to, and more predictive of, achievement outcomes the more specific that it is conceived and assessed" (p. 175). Obilor emphasized that the more students compare their specific academic domain self-perception to their overall self-perception, the more their academic performance would decline. This could indicate that domain-specific self-perception may not be sufficient as a variable when attempting to identify its correlations with academic performance. It seems to be logical that students would make judgments about their ability to perform on any given task, and then pragmatically arrange future behavior to include or avoid certain tasks based on this judgment.

Researching Other Aspects of Self-perception and Academic Performance

The discussion of the extant literature presented in previous sections raises the question of whether a student with a positive self-perception can perform better. Craven and Marsh (2011) answered it, saying "self-perception is indeed a 'hot' variable that makes good things happen: Increases in specific domains of self-perception lead to increases in associated achievement-performance domains and other desirable outcomes" (p. 122). They went on to say that it is important to "enhance self-perception to maximize human potential" (p. 122). Similarly, Choi (2005) found that "Both academic self-perception and specific self-perception were significant predictors of term grades" (p. 203). If this claim is true, Choi (2005) and Marsh (2011) represent the type of research necessary to move the focus forward to an examination of any and all contributing factors associated with self-perception. For example, Lo et al. (2014) examined the role of the school library in the Asian educational systems. They report that the role of school libraries in the educational systems of Asia has diminished and "as a result, students are drilled to learn by rote memorization. For that reason, the school library and enquiry-based learning have almost no role to play in the overall curriculum (p. 70). This seemed to follow up on a previous study of the relationship between racial identity, self-perception, and academic performance, by Award (2007). Award (2007) reported that self-perception seems to be highly correlated to academic performance.

Self-perception does not always take such a delineated path to correlations with academic success. (Roebers et al., 2012) added to the body of literature the importance of realizing that sometimes, other cognitive process, such as executive function and metacognitive phenomena, are found to be moderators of academic performance.

Obviously many indicators are connected with any human concept; yet, self-perception seems to be related to most. This is in line with the view offered by Pershey (2010), who noted that "students who do not perceive themselves as able, who lack confidence, or who have diminished school satisfaction may be at risk for school disengagement" (p. 53). At this juncture, it may be prudent to interject a voice of dissent regarding a causal relationship between self-perception and academic performance. Stringer and Heath (2008) pointed out that "self-perception of academic competence cannot play a simple, causal role in academic achievement" (p. 327). Thus, it seems obvious that the human condition is rarely something that researchers are studying in a vacuum, as other variables must play some role, whether concomitant, or in concert during certain conditions. Worrell (2007) claimed that "social identity variables do play an important role in student achievement" (p. 32). In other words, it appears that humans eventually realize or want to know who they are. Florin et al. (2011) added to the breadth of this line of thinking finding that various self-perception factors, such as perceived obesity, could influence the academic performance of adolescents. This finding further validates the connection between the way students think about themselves and their academic course work. However, it is not clear from the available data if there is a causal link between self-perception and academic performance.

Areepattamannil (2012) found that "adolescents in Canada may not differ much from their counterparts in India in terms of the mediating effect of academic motivation on the relationship between school self-perception and school achievement" (p. 382). Thus, it can be posited that students derive some type of assuredness and security from the mental picture they have of themselves, which includes their social identity.

Following their study, Cokley and Patel (2007) reported a positive relationship between acculturation and academic self-perception among Asian-American college students. However, it should be noted that these students are college-aged and other factors not attributable to high school students could present significant effects on the study. Still, acculturation could be another clue to validating the assertion that being comfortable in one's own skin is an important factor in determining academic performance. Marsh and O'Mara (2008) pointed out that it is not only academic self-perception that can have an impact on a students' academic performance, as their "prior self-esteem" can affect their school work as well (p. 548). Academic self-perception and other competency specific paradigms of self-perception are often part of a research plan in the area of self-perception and academic performance. For example, Mills, Pajares, and Herron (2007) stated that "Students who perceived themselves as capable of using effective metacognitive strategies to monitor their academic work time effectively were more apt to experience academic success in intermediate French" (p. 417). Marsh and Martin (2010) also offered support for the relevance of using self-perception as a predictor of academic performance, as they noted a link between levels of academic self-perception and academic achievement.

According to Marsh and Martin (2010), their "research provides a particularly appropriate methodology for evaluating causal hypotheses that a particular psychosocial variable has a significant effect on subsequent measures of achievement" (p. 73). This is certainly a viable foundation for future research along these lines. Yet, the authors also indicated that, in their work, they "rely on domain specific academic self-perception" (p. 74). Matovu (2012) found that "academic effort is a component of academic self-

perception which was found to have a significant difference among students, male and female, on their academic achievement" (p. 14). It is also important to highlight the fact that domain-specific ideas about academic self-perception can cause gains and losses relative to different academic domains, which also affects their relationship with said performance. For example, Moller et al. (2008) reported that a student may "develop a lower German self-perception than their grade in the subject would warrant" (p. 119). Conversely, "dimensional comparisons have positive effects on a student's better subject, where a more positive self-perception is developed" (p. 119). These researchers seem to be adamant that examining self-perception in the context of academic domain-specific variables is the best way to investigate relationships between self-perception and academic achievement. Muijs (1997) went as far as to say that "global self-esteem was not a significant predictor of wave 2 achievement" (p. 274).

Self-perception is a construct that lends itself to examination on several different levels. In that respect, academic self-perception can be viewed as a level of overall self-perception, which researchers are keen to observe and measure. Okeke et al. (2009) described academic self-perception as "the constellation of perceptions that individuals hold about their academic abilities" (p. 369). These researchers also pointed out that the cognitive picture students create when assessing their academic potential can bolster their ability and willingness to succeed when challenged academically. Erkman et al. (2010) explained the statistically significant relationship between students' perceived teacher acceptance and academic self-perception. The authors claimed that teachers' attitudes towards students can funnel directly into students' thoughts about their academic abilities.

Ferrando et al. (2010) included emotional intelligence as a variable in their study of factors that affect students' academic performance, noting that the two are interrelated. They went on to suggest that, while emotional intelligence and self-perception have a moderate correlation, both are positively linked with academic performance. Tambo (2011) reported that "the findings indicate that the self-perception of mathematical ability of girls in the single-sex school is higher than those in coeducational school" (p. 22). Therefore, the way students see themselves could be a learned and ongoing construction process, with emotional factors playing different roles of varying intensity and importance throughout the cognitive growth of a student. According to Ifeanyi (2011), socioeconomic status is yet another variable that interacts with self-perception and academic achievement.

In his study, Ifeanyi explained the positive and open-ended relationship between academic achievement and self-perception. For example, a student from an upper-income family might indeed have overall better achievement than a student from a lower socioeconomic group, but still be negatively affected by the failures or setbacks encountered academically. Self-perception is also known to share reciprocal effects with academic performance, as Mclnerny et al. (2012) pointed out in their study. Yet, their study did not completely clarify the strength of the self-perception factors' significance or effects on the participant data. Furthermore, according to the authors, it is unlikely that self-perception, or any other variable, demonstrates effects in isolation; rather, it may exhibit multidimensional patterns of effect within several different frameworks. This seemingly confounding phenomenon makes it very difficult to establish definitively a causal link between self-perception and academic performance.

In an earlier study, Meltzer et al. (2004) described interactions between students' academic self-perceptions and the expectations of their teachers. This is yet another example of the flexibility and salient impact that self-perception can have on the minds of students. In addition, it is important to point out that in many of these studies— particularly those conducted by Ifeanyi (2011), Ferrando et al. (2010), Erkman et al. (2010), and Okeke et al. (2009)—the researchers used multiple regression analyses to measure the interactions among self-perception, academic performance, and other factors, such as ethnicity and socioeconomic status. Moreover, it is important to note that study of self-perception cannot be limited to the micro scale factors and effects. Macro applications of studying this variable, in relation to academic performance, seem to be quite fruitful as well. For example, Pandya's (2010) research "implies that schools in India contribute to developing a positive students' academic and social self-perception perspective of student background variables such as their social economic status or prior academic performance of the students" (p. 21).

Stewart, Roberts, and Kim (2010) explored the validity of various perception scales in accurately gauging the self-perceptions of African-American adolescents. According to their findings, when quantifying self-perception, accounting for variables, such as ethnicity, is important. In a similar study, Sulivan & Evans (2005) found that "self-worth is a predictor of academic performance" when studying African American adolescents (p. 513). The authors further noted that the more success students have with academic tasks, the greater their self-perception will be. Within the context of education, Sulivan and Evans supported this claim with findings of their study involving a link between self-perception and academic performance. In an earlier study, Todd and Kent

(2003) described potential discrepancies between adolescents' self-perception they communicate cognitively within themselves and the self-perception they convey to the world. As the authors noted, saying one thing to their peers while holding on to another set of thoughts internally is an example of the communication of self-perception that teens may be conducting on a daily basis. In a recent study, Yesil and Korkmaz (2010) successfully created "intelligence profiles based on self-perceptions" (p. 3). The researchers used Multiple Intelligence Theory in order to produce valid and reliable profiles of participants based on their self-perceptions.

Yesil and Korkomaz thus concluded that, with respect to self-perception, intelligence may merely be a matter of perceiving competence germane to a specific genre. For example, a recent study conducted in Turkey by Erkman et al. (2010) demonstrated that male students' perception of their relationship with their teachers could affect their academic performance. The authors noted that, when it comes to students, the perceived relationships between them and their teachers are a huge part of their "attempt to adjust to the school environment" (p. 296). Similarly, Dupont et al. (2014) reported that certain "dimensions of social context have specific effects on self-perception variables and these perceptions are mediators of the relationship between context and student engagement" (p. 18). Thus, students' perceptions cannot be treated as isolated phenomena, but rather addressed using a systemic approach capable of identifying their complex needs. Hence, the study conducted by Du Pont et al. (2014), whereby the authors examined the role social context in the development on self-perceptions may assist in the development of strategies aiming at increasing student engagement. In this vein, De Dreu (2006) pointed to the existence of "the omnipresent and fundamental role

of other-orientation in explaining and predicting organizational behavior. Their analysis explains how other orientation moderates critical relationships in organizational psychology" (p. 1250). Furthermore, Murphy (2012) demonstrates that "alternative school principal beliefs in their abilities to be effective instructional leaders predicted an increase in student achievement (p. 87). The fact that these researchers highlighted the crucial role that the inferences individuals make about the way others perceive them demonstrates that the very nature of life is much more than three-dimensional.

Thus, implications of these findings support some correlations between self-perception and academic performance, but very little causal based evidence. The logic model in Figure 2 illustrates the dynamic process of self-perception. As seen in the model, communication and adaptation are ongoing processes and represent the builders of knowledge, pragmatics, and intelligence. Furthermore, special education can be conceptualized as yet another system and organization in which a student with learning disabilities uses communication to adapt and form relationships in. However, what if some of these relationships are maladaptive? What if some of the relationships somehow negatively affect a student's self-perception in a negative way? Will this affect their academic performance?

Therefore, as supported by the Self-Perception Process shown in Figure 2, in order for an effective intervention plan to be proposed, more evidence of significant relationships between self-perception and academic performance and its effect within a special needs population, is needed.   This dissertation proposal intends to identify a significant relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth, as measured by the Harter-Renick Self-

Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among students at a boarding school for adolescents with learning disabilities.

Researching Self-perception, Academic Performance, and Students with Learning Disabilities

Students with learning disabilities (LD) categorically bring their learning differences into the variable matrix. Gans et al. (2001) found that students with LD typically score significantly lower on self-perception measures compared to students without learning disabilities. The authors went on to say, "Most students with LD know that they have been labeled with a disability and, thus, somehow differ from their peers" (p. 292). These findings do a good job of demonstrating the psychological burden that students with LD carry on a daily basis. This burden is then transferred into negative feelings, which serve to bring down their overall spirit, as well as negatively influence the image they have of themselves. Ju et al. (2012) reported that "prior academic self-perception predicts subsequent academic achievement" further noting that "prior academic achievement also predicts subsequent academic self-perception" (p. 12).

The relationship between self-perception and academic performance of students with special learning needs thus requires further examination. This seems especially true of academic self-perception. Sparks and Lovett (2006) conducted a study in which college students with learning disabilities (LD) took part, reporting that "students with LD classifications are typically not below average in an absolute sense, they have been found to have lower academic skills than do their non-classified peers, on average" (p. 507). In a similar study, Lackaye and Margalit (2006) noted that "academic self-efficacy

represents students' beliefs in their abilities to function in school" (p. 443). According to

these authors, it is important to understand that students are individuals and their

perceptions of their LD and what that means to them will vary.

Ju et al. (2012) offered empirical evidence suggesting that, at the elementary

level, prior academic self-perception predicts subsequent academic achievement.

Therefore, it is essential to realize that students with LD will most likely have a more

negative self-perception than their healthy peers would, but may manage it in several

different ways. Heath et al. (2011) corroborated this view, stating, "Adolescents with LD

may begin to incorporate more realistic self-perceptions about their specific area of

difficulty" (p. 410). This is perhaps due to their need to cope effectively with and

compensate for their shortfalls. This assertion is strengthened by Ju et al. (2012) and

Heath et al. (2011) in that participant sample sizes were fairly large, and covered both the

elementary and high school populations. Sparks and Lovett (2009) pointed to the

ambiguity in measuring the effects of self-perception on academic performance of

college students with learning disabilities. This finding may give credibility to the

assertion that adolescence is the time when self-perception of students with learning

disabilities is most malleable and should be studied.

Research using the Harter-Renick Self-Perception Profile

The Harter Renick Self-Perception Profile (HRSPP) for Learning Disabled

Students is a "self-report measure for assessing both learning disabled and normally

achieving children's domain-specific judgments of their competence or adequacy and

their perceived self-worth or esteem as a person" (Renick & Harter, 2012, p. 7). By

allowing the respondents to self-report, the HRSPP may gain a closer depiction of the

true essence of participants' genuine feelings about themselves. The authors elaborated on this, stating that "Each of the subscales yields a separate score, allowing, for the profile of a child's evaluative judgments" (p. 7). By collecting and extracting the data pertaining to self-perceptions of a participant's domain specific criteria, a tentative picture of what the self-perceived world of a student looks like may be attained more easily.

Reliability and validity verification of the HRSPP involved examining item means and standard deviations in order to determine if there were any range or ceiling effects. Next, internal consistency reliability estimates were calculated utilizing Cronbach's alpha coefficients to test each subscale and gauge the magnitude of each domain registering consistent responses. Subscales with at least .79 were considered to be of an acceptable value. Figure 1, Harter-Renick Chronbach Alpha Coefficients, lists the alpha scores specific to the HRSPP subscales used in this study.

Table 1

Harter-Renick Chronbach Alpha Coefficients

Subscale	Alpha
General Intellectual Ability	.81
Reading Competence	.80
Writing Competence	.84
Spelling Competence	.88
Math Competence	.90
Global Self-Worth	.85

The information obtained via Harter and Renick (2012) demonstrates that these subscales are considered to be reliable (p. 30). HRSPP Factor loadings are listed in Table

2 and Table 3 (Harter & Renick, 2012). These factor loadings indicate how much a subscale question explains its relationship with a variable in the factor analysis.

Table 2

HRSPP Factor Loadings I, Renick (2012).

Item Description	General Intellectual Ability	Reading Comp	Spelling Comp	Writing Comp	Math Comp
1. Are pretty smart in school	.60				
11. Just as smart as others their age	.61				
21. Good learners in school	.35				
31. Are pretty bright at their schoolwork	.55				
41. Are very good at their schoolwork	.52				
3. Can read most stories and books		.63			
13. Are really good readers		.75			
23. Do well in reading		.80			
33. Read pretty fast		.62			
9. Know how to spell most words			.67		
19. Can spell pretty easily			.86		
29. Can spell a lot of words			.72		
39. Do well in spelling			.76		
5. Can easily write stories or papers				.79	
15. Can easily write sentences or paragraphs				.66	
25. Can write good stories or papers				.53	
35. Can write good sentences or paragraphs				.42	
7. Can do math easily					.83
17. Are good at math					.79
27. Do well at math problems					.67
37. Can understand math easily					.80

Table 3

HRSPP Factor Loadings II, Renick (2012).

Item Description	Social Competence	Athletic Competence	Behavioral Conduct	Physical Appearance
2. Easy to make friends	.67			
12. Have as many friends as want	.50			
22. Always doing things with kids	.56			
32. Are popular with others	.68			
42. Have a lot of friends	.80			
4. Good at new games		.69		
14. Good enough at sports		.54		
24. Do well at all kinds of sports		.91		
34. Could do well at new athletic activity	(.22)	.54		
43. Better than others their age at sports		.67		
6. Act the way are supposed to			.66	
16. Don't get in trouble			.73	
26. Behave themselves			.71	
36. Follow rules			.59	
44. Like the way they behave			.64	
8. Like their face/hair				.61
18. Like their physical appearance				.69
28. Think they are good looking				.46
38. Are happy with way they look				.68
45. Like their body	(.22)			.45

Harter and Renick (2012) used factor analysis to demonstrate evidence of content validity by yielding "clearly interpretable factors for each subscale" (pp. 31-32). These valid factors help to demonstrate the HRSPP as being a unidimensional statistical tool. As the HRSPP is a proven reliable and valid instrument, it has subsequently been used and cited in several studies related to self-perception.

For example, Gent et al. (2012) used the HRSPP to examine self-concept and ego development in deaf adolescents. Only by evaluating the answers to the questions included in the HRSPP could these researchers begin to conduct statistical analysis, looking for correlations between the data pertaining to perception and their other research variables. In an earlier study, McCullough and Muldoon (2008) used the HRSPP to look for statistical relationships between self-esteem and obesity in adolescents. One of the most interesting features of the HRSPP is the inclusion of ten sub-scales that measure participants' perceptions within many different domains, along with categories such as "Global Self-Worth," which measures a participant's overall feelings about him/herself as a person (Renick & Harter, 2012, p. 4).

In addition, HRSPP facilitated Muldoon and Trew (2000) in their application of MANOVA to analyze the data according to respondents' gender, age, and socio-economic status. Owing to the inclusion of the sub-scales, a person's self-perceptions, self-esteem, self-concept, etc. could be presented more clearly and the findings explained in the context of several key factors. The domains streamline a participant's self-perceptions, which lends the HRSPP so well to research. Ethnicity, a variable present in many research models, is another example of the HRSPP's versatility when examining demographic phenomena. For example, Stewart et al. (2010) reported that "there is little

research assessing the psychometric properties of the SPPC (self-perception profile for children) for use with an African American population" (p. 326). Hence, the HRSPP seems to be a unique and specific instrument to use when examining such variables.

Thomas and Zand (2002) used the HRSPP to examine the psychometric properties of 174 African-American adolescents. The authors not only found gender differences, but also asserted that there may be nuances associated with the application of the HRSPP to different ethnic groups. According to Ninot, Bilard, and Dellgnieres (2005), "researchers have long wondered about sport participation as a means to improve self-image, especially in adolescents with intellectual disabilities" (p. 682). The HRSPP features "Physical Appearance" as one of its self-perception sub-scales. This allowed the authors to conduct statistical analyses to specifically gauge the effect of students' self-perceptions of their physical appearance on the participation in athletics.

Sexuality, an often overlooked aspect of a student's personality, can impart self-perceptive contributions. For example, Travers et al. (2014) talks about how "professionals, caregivers and parents, support staff, and other relevant stakeholders will likely need training on how to build capacity and provide opportunities for sexual development in persons with significant disabilities (p. 244). It is important to remember that everything within the sphere of influence of a student with special needs may indeed affect their self-perception in some manner. For example, Torte-Chiche (2011) reports the disparities between the self-perception of students with special needs of divorced parents and those without (p. 107). Todd and Kent (2003) explored a similar topic and used the HRSPP to examine student athletes' perceptions of themselves.

In another study that utilized the HRSPP, Portes (2005) demonstrated that the instrument was also convenient when analyzing the complex streams of data belonging to other self-report measures, such as the Divorce Adjustment Inventory-Revised. The researcher successfully analyzed the subscales of two self-report measures and was able to further elucidate the adjustment process children affected by divorce may go through. The HRSPP was also valuable to Sullivan and Evans (2006), who subjected the data it yielded to statistical analyses examining the self-perceptions of adolescents living in public housing. The HRSPP data also found use in the study conducted by Vedul-Kjelsas (2011), who explored motor-competence and physical fitness via "Movement Assessment Battery for Children (MABC) and the Test of Physical Fitness (TPF) to assess self-perception, motor competence and physical fitness" (p. 394).

Research Using the Stanford Achievement Test-10

The Stanford Achievement Test-10 (SAT-10) is a standardized test of reading and mathematics abilities. Spencer, Quinn, and Wagner (2014) used the various scales built into the SAT-10's reading and math assessments to pinpoint the exact measureable features within the participant sample that best suited the research question. This dissertation proposal intends to utilize SAT-10 total reading and total math scores to measure academic performance. Total reading and total math scores are more desirable in this instance because they align more closely with the study's stated goals.

Thus, it seems more likely that a relationship between self-perception and academic performance may be more easily detected by incorporating all the aspects of reading and math into one total score. This line of thinking is similar to "casting a wider net" when fishing. Chingos (2010) used SAT-10 total reading and math scores to

measure the effectiveness of academic programs across an entire school district. With so many students, and a need to assess their academic status for the purpose of guiding public education policy, SAT-10 total reading and math scores seem quite suitable. Jennings and Sohn (2014) reported that in some school districts in Texas, "the Stanford is used in decisions to place students in gifted and talented programs, and special education" because its total reading and math scores allow administrators to check for a large effect (p. 129). Gottfried (2012) used the SAT-10 to track a "sample of entire cohorts of urban elementary school children the Philadelphia school district over 6 years of observations" (p. 139). The study in this dissertation utilized a census sample representing almost the entire population of interest. In this respect, the fact that Gottfried (2012) used SAT-10 total reading and math scores to measure the academic performance of entire cohorts of students over six years in a highly populated city affirms the use of the SAT-10 for the research put forth in this dissertation proposal.

Reliability and validity was assessed by using internal consistency measurements by the SAT-10 creator Pearson, Incorporated (2014); "The Reading section of the SAT-10 received an alpha reliability rating of .87, the Math section .80-.87, and the language section .78-.84" (p. 10). Furthermore, researchers, such as Pots (2014) reported that "the SAT-10 is an extremely popular achievement test that was administered in over 5700 private schools last year as well as serving as the state tests for Arkansas and Alabama" (p. 2011). However, Wright (2002) stated that as more states develop their own academic performance measures, the SAT-10 may be losing traction. Furthermore, as with many standardized tests, the SAT-10 can have issues associated with cultural biasedness and assessing the performance of developmental English Language learners

(p. 136). However, these issues have not stopped the seemingly wide usage and proliferation of the SAT-10 as an instrument of choice for measuring academic performance.

Summary

The depth and breadth of the HRSPP has made it an indispensable data collection instrument in modern educational research. Thus, this study employed the HRSPP in a meaningful way to help elucidate the possible connections between self-perception and academic performance among adolescents with learning disabilities. The Self-Perception Process shown in Figure 2 illustrates the dynamic process of self-perception. As seen in the model, communication and adaptation are ongoing processes and represent the builders of knowledge, pragmatics, and intelligence. Furthermore, special education can be conceptualized as yet another system and organization in which a student with learning disabilities uses communication to adapt and form relationships in. As demonstrated in the Self-Perception Process, academic performance is a factor of human will that is most likely spawned from the ongoing and dynamic process of communication, adaptation, and relationship building.

Students' consciousness of self and knowledge use communication to pragmatically and intelligently adapt to the process and environments of education; special education notwithstanding. Thus, maladaptive and negative relationships then too become part of academic performance and could possibly become an ongoing process of negative academic outcomes detrimental to a students' education. Because the way in which adolescents with learning disabilities can feel about themselves can potentially affect their performance in school, the link between their self-perception and academic

attainment must be examined further, in order to better meet their learning and emotional needs.

In pursuit of this goal, the study was guided by the research question, thus the findings the study yields will help fill the gap in the literature on the relationship between self-perceptions and academic performance of adolescents with learning disabilities. Chapter 3 will elaborate on the quantitative research strategy, rationale, setting, sample, participants, and the particulars of handling the research data.

Chapter 3: Research Method

Background

The purpose of this study was to investigate the relationship between self-perception and academic performance of students with learning disabilities. Thus, the study was guided by the research question:

What is the relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities?

Hypotheses for this study are as follows:

H_{01}: There is no significant relationship between students' self-perception of reading competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{a1}: There is a significant relationship between students' self-perception of reading competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{02}$: There is no significant relationship between students' self-perception of writing, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a2}$: There is a significant relationship between students' self-perception of writing, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{03}$: There is no significant relationship between students' self-perception of spelling competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a3}$: There is a significant relationship between students' self-perception of spelling competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{04}$: There is no significant relationship between students' self-perception of mathematics competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-

10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{a4}: There is a significant relationship between students' self-perception of mathematics competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H₀₅: There is no significant relationship between students' self-perception of general intellectual ability, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H_{a5}: There is a significant relationship between students' self-perception of general intellectual ability, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H₀₆: There is no significant relationship between students' self-perception of global-self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a6}$: There is a significant relationship between students' self-perception of global-self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{07}$: There is no significant relationship between students' chronological age and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a7}$: There is a significant relationship between students' chronological age and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{08}$: There is no significant relationship between students' specific learning disability and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

H$_{a8}$: There is a significant relationship between students' specific learning disability and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities. These inquiries and the topic in general, remain in the focus of discussion and research within the field of special education.

Research Design and Approach

This study relied on multiple regression, using step-wise data entry for analysis. One hundred twenty-eight students in grades seven through twelve, perceived intellectual

ability, reading, writing, spelling, mathematics competence, and global self-worth

HRSPP subscale scores were treated as predictor variables. Because the census

represents six different grade levels and various learning disabilities, maturation and

selection are possible effects on the predictors of interest. According to Slaughter (2012)

effects such as these should be accounted for by including them as modifiers within the

model. Thus, participants' chronological age and specific learning disability were treated

as effect modifiers. Stanford Achievement Test-10 Total Reading and Total Math scores

serve as the dependent variables in a multiple regression analyses using step-wise data

entry.

The multiple regression analysis, using step-wise data entry method allows a

researcher to examine the Regression Correlation Coefficient (R^2), calculated when

looking for instances of linear dependence between two sets of variables within a

regression (Muijs, 2004). Therefore, by examining the R^2 or regression results, and using

the standard prediction equation, one variable can be used to predict values for another

variable (Verma, 2004). Thus, regression analysis allows researchers to evaluate the

strength of any correlations by determining how collinear these relationships are.

In this study, HRSPP subscale scores will serve as predictor variables within the

regression. It is also important to note that any independent variable may have varying

and unique interactions with the dependent variable within the regression. For example,

according to Award (2007), "Although GPA and standardized test scores are considered

measures of academic performance, the study findings indicated that these academic

variables function differently in terms of their relationships with racial identity, academic

self-perception, and self-esteem" (p. 200). This indicates that a complex set of factors

could affect academic performance. Therefore, examining the collinear relationship attributable to relationships between the HRSPP subscale scores and the Stanford Achievement Test-10 Total Reading and Total Math scores may indicate if the relationship is significant at the .05 level, and may also make it possible to gage its effect size by analyzing Pearson's R. In this study, the prediction equations are as follows: $Y_1 = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8$ and $Y_2 = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8$

Multiple regression using step-wise data entry was chosen as the analysis for this project based on the following rationale: Using t-tests would increase the probability of committing type-I error. "T-tests use a .05 level of significance then for each test the probability of falsely rejecting the null hypothesis (known as a Type I error) is only 5%" (Field, 2010). With six predictor variables, plus two modifiers being tested with two dependent variables, the Family-Wise Error rate or the probability of committing Type I Error across the numbers of t-tests, becomes unacceptable (2010, p. 348). Using an analysis of variance (ANOVA) seems better fitted to an experimental design that is measuring differences between groups. However, multiple regression seems to be a better choice for a complex design that is examining co-linearity among variables (Field, 2010).

Setting and Sample

A census sample representing the population at the Green School (a pseudonym, in order to ensure that the actual school remains anonymous), which is a private college preparatory boarding school for students with learning disabilities located in the northeastern United States, was used for this study. The entire population of the Green

School is comprised of 140 students. This coeducational environment, teaches students in grades seven through twelve, and practices a rolling or continuous admissions process. The Green School has six dormitories, all within easy walking distance of the eight classroom buildings. The Green School serves a student body representing 15 countries, including the United States. The student population is 90% percent European-American, 5% African-American, and 3% Asian. The faculty is predominately white, of whom 8% are female and less than 1% is of African-American and Latino descent. It is not certain how many of the students at the Green School receive some form of prescription medication, but the institution does keep a core of registered nurses on staff.

The participants within the sample of this study include: 128 male adolescents from ages 12 to 18, ranging from grades 7 through 12, consisting of Black, Asian, Latino, Middle-Eastern/North African, White, and other ethnicities, having United States and international citizenships, with AD/HD, ASD, CAPD, Comorbid, DD, SLD, and ODD learning disabilities.

A census sample from the Green School, a private preparatory boarding school for students with learning disabilities, provided the target groups for this research. Harding and Jupp (2006) stated that "a census with a 100 percent response rate has an advantage over a sample in that; there are no concerns as to whether the people who take part are representative of the population" (p. 4). Specifically, the researcher will utilize the scores selected students attained in the Harter Renick Self-Perception Profile for Learning Disabled Students (HRSPP), which measure self-perception, as well as their Stanford Achievement Test-10 scores, which measure academic performance from 128 student records. Participants' chronological age and specific learning disability were

included as modifiers within the model. The census sample was used for the school year 2013-2014.

<div align="center">**Instrumentation and Materials**</div>

Predictor Variables

As noted above, subscales from the HRSPP (Harter, 1988) will serve as the predictor variables for this study. The Green School gave explicit and written permission for the researcher to access HRSPP student data. This permission may be found in Appendix A of this dissertation. The HRSPP features 32 items grouped into eight sub-scales, with general intellectual ability, reading, writing, spelling and mathematics competence, as well as global self-worth, being used as the predictor variables. Each item describes two different types of young people for the participants (Alves-Martins, 2002). Thus, participants are first asked to identify him/herself with one of the two groups, before indicating whether the description provided is "Really True" for him/her or "Sort of True" like him/her (see Figure 3).

Figure 3. HRSPP Item

Thus, researchers using the HRSPP can be quite specific in their selection of subscales for use in any given project. Renick, the co-author of the HRSPP, stated that "the self-perception profile was designed to allow researchers to remove subscales to target specific areas of inquiry" (personal communication, December 17, 2014). As

previously noted, due to the nature of the phenomenon of interest, the subscales serving as the predictor variables in this study include perceived intellectual ability, reading, writing, spelling, and mathematics competence.

HRSPP Validity and Reliability

The HRSPP is an adaptation of Harter and Renick's original 1985 scale, which is specially designed for adolescents with learning disabilities. For example, according to Harter and Renick (2012), students with learning disabilities "make differentiations in their self-perceptions regarding their competence" (p. 110). Thus, the scale used in this study featured additional competency items, making it necessary to determine their reliability and validity measures in order to establish their strength. Item means and standard deviations were examined in order to determine if there were any range or ceiling effects.

Next, internal consistency reliability estimates were calculated utilizing Cronbach's alpha to test each subscale and gauge the magnitude of each domain registering consistent responses. Subscales with at least .79 were considered to be of an acceptable value. The item means for the HRSPP range between 2.3188 to 2.6375 (minimum = 1.00; maximum = 4.00), which demonstrates that there are no ceiling or floor effects for the sample. Reliability and validity verification of the HRSPP involved examining item means and standard deviations in order to determine if there were any range or ceiling effects. Next, internal consistency reliability estimates were calculated utilizing Cronbach's alpha coefficients to test each subscale and gauge the magnitude of each domain registering consistent responses. Subscales with at least .79 were considered to be of an acceptable value. Table 4 lists the Cronbach alpha coefficients for

the specific HRSPP subscales to be used in this study. The information obtained via

Harter & Renick (2012) demonstrates that these subscales are considered to be reliable

(p. 30).

Table 4

HRSPP Study Specific Subscales

Subscale	Alpha
General Intellectual Ability	.81
Reading Competence	.80
Writing Competence	.84
Spelling Competence	.88
Math Competence	.90
Global Self-Worth	.85

Harter and Renick (2012) used factor analysis to demonstrate evidence of content

validity by yielding "clearly interpretable factors for each subscale" (pp. 31-32). These

valid factors help to demonstrate the HRSPP as being a unidimensional statistical tool.

The HRSPP independently explores student responses using four separate

domains, namely "scholastic competence, athletic competence, social acceptance, and

global self-worth" (Harter, 1988, p. 34). Furthermore, each domain contains subscales,

which allows the participants to respond on the survey indicating how they feel about

how well they can perform certain tasks or in certain situations. However, there is

another battery of questions that parallels the main battery and asks students "if they are

more like the children described on the left side of the statement or more like those

depicted on the right side" (Harter & Renick, 2012, p. 35). This allows the responses to

be ranked using a four-point scale ranging from "least competent" to "most competent"

(Harter & Renick, 2012, p. 35).

Effect Modifiers

Because the census represents six different grade levels and various learning disabilities, maturation and selection are possible effects on the predictors of interest. According to Slaughter (2012), effects such as these should be included as modifiers within the model (p. 6). Thus, participants' chronological age, and specific learning disability were treated as effect modifiers.

Maturation effects on a study can result from a test participant's age contributing to their performance on the collection instrument (Field, 2010). Including the participants' chronological age, in this case 128 of them, within the study, will allow the relationship a participants' age might have with the SAT-10 Total Reading and Total Math scores to be examined and elaborated on. Lee, Finn, and Liu (2011) used age as a modifier in their study of the determination of "different amounts of time needed for learning at different age or grade levels" (p. 1). Simply put, the data gathered might demonstrate that there is a statistically significant amount of variability associated with different age groups and their academic performance measures.

Selection effects on a study can result from participants within the study population having an unequal balance in their abilities to respond to the measures (Field, 2010). Including participants' specific learning disabilities into the variable matrix as a modifier can account for any relationship the various participants' learning disabilities might share with the SAT-10 Total Reading and Total Math scores and allow the researcher to comment on their implications for the study results. Similarly, Descheemaeker et al. (2005) used "well known types of learning disabilities" to modify for selection effects in their study of the "neuropsychological profiles of normally gifted

students" with neurofibromatosis (p. 33). Thus, a variability in participants' specific learning disability may be significantly attributable to variability in the academic performance measures.

The Stanford Achievement Test-10 Total Reading and Total Math Scores

The Stanford Achievement scores are expressed as a Total Reading score and a Total Math score, which serve as this study's performance measures and the dependent variables in a multiple regression analysis with step-wise data entry. Fisher and Lapp (2013) believe strongly that "students must acquire the language of the test" if they are to accurately engage with the questions (p. 634). Since the SAT-10 data for this research project was collected at a boarding school for adolescents with learning disabilities, such as SLD affecting reading ability, a legitimate concern becomes whether or not the participants can comprehend the math portions of the SAT-10's.

Johnson (2011) "suggested that elementary students struggle with testing vernacular more significantly that middle and high school students, due to their developing vocabulary. This trend is continuous when examining IEP or ELL students" (p. 98). Thus, the Green School takes advantage of the SAT-10's instructions, highlighted in Case (2004) that these test may indeed be administered untimed and the math portions of the SAT-10 may be read to students if they have questions about a particular test item. This type of accommodation proved to be a contributing factor in the positive effects of a similar intervention documented in Case (2004) involving a statewide mandated standardized exam.

The Green School pays for the use of the Stanford Achievement Test-10s to measure academic strengths, growth, regressions, and weaknesses of its student

population. Thus, the Green School has given their expressed permission to utilize their

Stanford Achievement Test-10 scores within this research project. The Stanford

Achievement Test-10 consists of two separate portions, which measure a student's

academic performance related to reading and math (Pearson Education, 2014), as shown

in Figure 5. In this study, the "Total Reading" and "Total Math" scores were are used as

the dependent variables in two separate regressions.

Figure 5. Stanford Achievement Test-10.

Stanford Achievement Test-10 Scores Reliability

Reliability information was obtained from Pearson Education, Incorporated

(2014). They reported that "the Reading section of the SAT-10 received an alpha

reliability rating of .87, the Math section .80-.87, and the language section .78-.84."

Power and Effect Size

The determination of power and effect size is based on the Faul et al. (2009)

G*Power 3.1 stats program using "Multiple Regression: Omnibus (R^2 deviation from

zero), Post hoc: Compute achieved power" analysis, with a medium effect size $f^2 = 0.29$,

power of 0.99, and eight predictors (see Table 2).

Table 5

Sample Size as Computed by G*Power

Input		Output	
Effect size f²	0.29	Non-centrality parameter λ	37.120000
α err prob	0.05	Critical F	2.0170917
Power (1-β err prob)	0.80	Numerator df	8
Number of predictors	8	Denominator df	119
		Total sample size	128
		Power (1-β err prob)	0.9964071

Field (2010) discusses the power of a statistical study as being the probability of rejecting

the null hypothesis, when the alternative hypothesis is true. Table 5 then proposes that

for this dissertation proposal, if the results of the multiple regression demonstrate an

overall critical F score of 2.0170917 or lower, the model has a 99% probability of

rejecting the null hypothesis, when the alternative hypothesis is accepted.

Effect size has also been determined by Faul et al. (2009) as G*Power 3.1 and is

set at .29, indicating a medium effect. Thus for the purposes of the study put forth in this

dissertation proposal, the researcher will examine Pearson's R to determine the effect size

of the analysis. Field (2010) views the effect size as being the amount of variance in the

model attributable to the interactions between the variables. Thus, the model in this

dissertation proposal would be expected to yield an effect size equal to or greater than

29% of the variance being attributed to the variable interactions.

Data Analysis

The data for this study includes: self-perception of reading, writing, spelling, and

mathematics competence and global self-worth, as measured by the Harter-Renick Self-

Perception Profile for Learning Disabled Students, and students' academic performance

as measured by SAT-10 Total Reading and Total Math scores among students at a

boarding school for adolescents with learning disabilities. The researcher ran a multiple

regression analysis, using step-wise data entry, to analyze the data. Pearson's R was

examined in order to report an effect size for the overall research model. P values were

examined within the Analysis of Variance (ANOVA) matrix computed by SPSS to

analyze the strength of the co-linear relationship between the predictor variables and the

dependent variables.

The data pertinent to this study was sourced from the archives of the Green

School's psychometric files, and was considered continuous and discrete. HRSPP

subscale scores represent interval data in that there is a zero score, represented by the

score of 1, and the numbers used are equal distance from each other. Also, the data

points entered in the multiple regression model are at the factor level, the subscale scores

can fall on the subscale from 1 to 5; SAT-10 Total Reading and Total Math scores are

interval data. Chronological age is also a ratio data set, because it has a true zero score,

and each year of age is equal to any other year of age.

Specific Learning Disability (SPLD) is a selection effect modifier and treated as a

nominal variable with various categories. Dummy variables were used to enter this data

set into the multiple regression equation for analysis. Kirk (2013) asserts that the

multiple regression equation is robust to violations of some of its assumption. Thus,

SPLD is a nominal, categorical variable comprised of the following dummy variables that

correspond with the 8 specific learning disabilities represented in the census for the

study: 1 = AD/HD; 2 = ASP; 3 = ASD; 4 = CAPD; 5 = Comorbid; 6 = DD; 7 = SLD; 8 =

ODD.

Pretest data was not deemed necessary to include in this proposed research model. The HRSPP has been used and administered to students at the Green School for several years and its administration has been well incorporated into their school year planning. Furthermore, the SAT-10 has been administered to students at the Green school for several years as well. Thus, data from the Green School archives represents a testing administration that is expertly familiar with the HRSPP and the SAT-10, making the inclusion of any pretest data superfluous and having very little bearing on any conclusions that might be drawn from this proposed research project.

Human Participant Protection

The Green School registrar linked student HRSPP subscale and SAT-10 scores to a research number, which was used in the research database during analysis. Informed consent statements were not deemed necessary, as the data is assembled by the Green School on a yearly basis and is part of their regular practice.

No unintended disclosure of confidential information (such as educational or medical records) was necessary for accomplishing the study objectives. School personnel oversee the storage and retrieval of student participant information and no personal information, such as names, addresses, etc., were necessary for the conducting of this research.

Data Security

Data for this study is kept in electronic and paper form in a secure location known only to the researcher. The data contains no names, addresses, phone numbers, Social Security Numbers, passport, driver's license, or any other personally identifying information that could compromise the privacy and security of the participants now or in

the future. All paper data will be destroyed via ShredIt services and discarded. All electronic data not directly recorded within the actual dissertation will be deleted and destroyed within five years of its collection.

Threats to Validity

The student data for use in this study is obviously reliant upon the feelings, attitudes, and other factors that affect the lives of the participants at the time the measures were administered. Thus, testing threats to validity—such as student participants' reactions to the overall test conditions, time of day, and the weather conditions—should be taken into account. However, the manner in which the measures were administered may mitigate such threats. For example, participants responded to each measure on a separate day and in one location, starting at about 10 am Central Standard Time and their involvement did not exceed two hours. Furthermore, the testing population indeed contains students with several different learning disabilities. However, because the focus of the Green School is primarily to provide college preparatory education to adolescents with language based learning disabilities, such as dyslexia and other SLD's, the testing population therefore may not be representative of the larger population of persons with learning disabilities throughout America and the world.

Summary

This study is designed to identify a significant relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth and students' academic performance. The sample population for the study was drawn from the body of students attending the Green School, which is a college preparatory boarding school for adolescents with learning disabilities. Anticipated

maturation and selection effects were modified for by including chronological age and

specific learning disability as variables. All Walden University ethical concerns,

including permissions and other IRB material, may be found in the corresponding

appendices.

Chapter 4: Results

The purpose of this study was to investigate the relationship between self-perception and academic performance of students with learning disabilities, relying on multiple regression, using step-wise data entry, for analysis. This chapter will describe the data collection, descriptive statistics, the proportionality of the sample to the population, and the basic analyses of the variables put into use within the statistical research model.

Data Collection

Data collection took place over a two-hour period during the course of a day, under the supervision of the appropriate staff at the Green School. The data was sourced from secured and archived files extracted from a Green School database at the direction of the resident psychometrician. HRSPP sub-scale scores and SAT-10 scores were obtained via electronic database secured and operated by the resident psychometrician. Once the data was collected, all non-essential demographic information was purged from the researcher's computer, leaving only the following essential data points: Participants' perceived intellectual ability, reading, writing, spelling, mathematics competence, and global self-worth HRSPP sub-scale scores; SAT-10 Total Reading and Total Math Scores; chronological age; and specific learning disability classification.

HRSPP subscale scores represent interval data in that there is a zero score, represented by the score of one, and the numbers used are equal distance from each other. Also, the data points entered in the multiple regression model are at the factor level, the subscale scores can fall on the subscale from one to five; SAT-10 Total Reading and Total Math scores are interval data. Chronological age is also a ratio data set, because it

has a true zero score, and each year of age is equal to any other year of age. Specific

Learning Disability is a nominal variable, but dummy variables were used to enter this

data set into the multiple regression equation for analysis. All data was then transformed

into z scores using SPSS.

<center>**Demographic Data Characteristics**</center>

Table 6 displays the characteristics of the census sample, (n=128), extracted from

the Green School.

Table 6

Demographic Data Characteristics

	N	%
Males	128	100
Females	0	0
Chronological Age		
Age 12	17	13.2
Age 13	20	15.6
Age 14	24	18.7
Age 15	12	9.3
Age 16	15	11.7
Age 17	16	11.1
Age 18	28	20.4
Mean Chronological Age	15.4	-
Ethnicity		
African-American	13	10.1
Asian	5	3.9
Latino	4	3.1
Mid-East/N. African	3	2.3
Other	3	2.3
White	100	78.3

Nationality

International	35	27.4
USA	93	72.6

Specific Learning Disabilities

AD/HD	21	19.2
ASP	16	12.3
ASD	17	8.2
CAPD	17	8.2
Comorbid	14	10.4
DD	12	9.3
SLD	21	16.4
ODD	18	16.0

AD/HD	=	Attention Hyperactive Disorder
ASP	=	Asperger's Syndrome
ASD	=	Autism Spectrum Disorder
CAPD	=	Central Auditory Processing Disorder
Comorbid	=	Comorbid disorders
DD	=	Depressive Disorder
SLD	=	Specific Learning Disorder
ODD	=	Oppositional Defiance Disorder

As listed within Table 6, all the test data came from 128 males, with the majority of the

participant data coming from 18-year-olds (20.4%) and 14-year-olds (18.7%). The

majority of the participant data also came from white students from the United States

(USA), making up (78.3%) and (72.6%) of the census respectively. Learning disabilities

seemed to be more evenly distributed with participant data coming from adolescents with

AD/HD, (19.2%) of the census, and SLD, making up (16.4%) of the census. Participant

data from adolescents with ASD and CAPD represented the lowest numbers of specific

learning disorders within the study representing only 8.2% of the census.

Descriptive Statistics

The data displays medium-high variance of .762, which is an indicator that the data points are somewhat spread out from the mean and each other, as shown in Table 3.

Table 7

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean
	Statistic	Statistic	Statistic	Statistic	Std. Error
SATrd	128	4.690835	-2.28348065	2.40735527	.077174702
IntAb	128	7.956611	-4.37199200	3.58461903	.088388347
Read	128	4.940523	-2.61307389	2.32744986	.088388347
Writ	128	6.628498	-4.14928462	2.47921374	.088388347
SpellC	128	4.678492	-2.49275953	2.18573343	.088388347
MathC	128	6.623348	-4.09819660	2.52515144	.088388347
Global	128	8.072317	-3.6757873	4.3965299	.088388347
SATmh	128	5.085570	-2.52689263	2.55867744	.088388347
ChronAge	128	6.00	12.49	19.49	.17642
Valid N (stepwise)					

.

Predictor	N	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Std. Error
SATrd	128	.8731320	.762	.276	.214
IntAb	128	1.000000	1.000	-.176	.214
Read	128	.9999999	1.000	.275	.214
Writ	128	1.000000	1.000	-.807	.214
SpellC	128	.9999999	1.000	-.118	.214
MathC	128	.9999999	1.000	-1.383	.214
SpLD	128	1.000000	1.000	-.882	.214
Global	128	1.000000	1.000	.987	.214
SATmh	128	.9999999	1.000	.184	.214
ChronAge	128	1.99600	3.984	.022	.214
Valid N (stepwise)					

Inferential Statistics

Stepwise Regression Analysis

Stanford Achievement Test-10 Total Reading scores as dependent variable.

Table 8, *Model Summary*, shows that Pearson's R for the model using SATrd as the

criterion variable, and GLOSW as predictor number 1, is .185, which indicates a small to

medium effect size (Field, 2010).   Adjusted R^2 is listed in Table 6 for predictor SPLD as

.027 indicating that that predictor accounts for 2.7% of the variability of the criteria

SATrd response data around the mean. It should be noted that when the discrepancies are

large between the R^2 and the adjusted R^2 means, there is redundancy in the model. The

standard error of the estimate is listed as .860840165.

Table 8

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.185	.034	.027	.8614073498	1.758

a. Predictors: (Constant), GLOSW
b. Dependent Variable: SATrd

Table 8, *Model Summary*, also shows that Pearson's R for the model with SATrd

as the dependent variable and featuring GLOSW as the predictor number 1 is .185, which

indicates a medium effect size (Field, 2010). It can be seen in Table 4 that .027 of the

variability found in the criterion, SATrd, is attributable to the predictor variable GLOSW.

The standard error of the estimate is listed as .8614073498. Finally, Table 8 also lists the

Durbin-Watson test result, which is 1.758 indicating a moderate amount of correlation

throughout the model featuring GLOSW as the constant predictor.

Table 9 displays the accepted variables after step-wise addition and examination of all study variables with Beta Coefficients lists the significance of the regression coefficients relative to the predictor variable, GLOSW. GLOSW is a significantly predictor for SATrd, $\beta = .185$, p = .036.

Table 9

Accepted Variables With Beta Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	-.2483E-11	.076		.000	1.000
	.162	.076	.185	2.117	.036*

a. Predictors: (Constant), GLOSW
b. Dependent Variable: SATrd
c. *p=<.05, **p=<.01, ***p=<.001

Table 10 illustrates the correlation matrix between the HRSPP subscales Perceived Intellectual Ability, Perceived Reading Competence, Perceived Writing Competence, Perceived Spelling Competence, Perceived Math Competence, and Global Self Worth; along with the chronological age and specific learning disabilities modifiers, and dependent variable the Stanford Achievement Test-10 Total Reading Scores. These variable interactions were made possible by using stepwise data entry within SPSS in order to find the most significant predictors variables in the study.

Table 10

SATrd Correlations

		SATrd	GLOSW
Pearson	SATrd	1.00	.185
Correlation	GlOSW	.185	1.00

   a. *p=<.05

Table 11, ANOVA, lists the results of the analysis of variance (ANOVA) for the

regression model using SATrd as the dependent variable and GLOSW as the predictor

variable. According to Table 8, GLOSW is found to be a significant main effect on the

criterion variable SATrd $F(1, 127) = 4.481$, $p = .036$. The F score for the model using

GLOSW as a predictor is well above the 2.017 critical F score rejection criterion, which

suggest that the null hypotheses germane to GLOSW with the criterion variable of SATrd

will be rejected and the alternative hypothesis accepted. This will be elaborated on in

detail later on in the chapter within the "Hypotheses" section.

Table 11

ANOVA

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	3.325	1	3.325	4.481	.036*
	Residual	93.495	126	.742		
	Total	96.820	127			

a. Dependent Variable: SATrd
b. Predictors: (Constant), GLOSW
c. *p=<.05

Research Question

     The question that guided this research project was: What is the relationship

between self-perception of reading, writing, spelling, and mathematics competence and

global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning

Disabled Students, and students' academic performance as measured by SAT-10 Total

Reading and Total Math scores among adolescents at a boarding school for adolescents

with learning disabilities?

The answer to the research question was answered by examining the hypotheses

results stemming from the stepwise regression. A discussion based on this analysis is

featured in Chapter 5.

Hypotheses Results

H_{01} There is no significant relationship between students' self-perception of

reading competence, as measured by the Harter-Renick Self-Perception Profile for

Learning Disabled Students, and students' academic performance as measured by SAT-

10 Total Reading and Total Math scores among adolescents at a boarding school for

adolescents with learning disabilities.

The null hypothesis, H_{01}, was retained, because the found p value for this variable

is greater than .05; β = -026, t(-297) = 767, p > .05 with SATrd as the dependent variable,

and β = -.014, t(-157) = 875, p > .05. with SATmh as the dependent variable.

H_{02} There is no significant relationship between students' self-perception of

writing competence, as measured by the Harter-Renick Self-Perception Profile for

Learning Disabled Students, and students' academic performance as measured by SAT-

10 Total Reading and Total Math scores among adolescents at a boarding school for

adolescents with learning disabilities.

The null hypothesis, H_{02}, was retained because the found p value for this variable

is greater than .05; β = -032, t(-357) = .722, p > .05 with SATrd as the dependent

variable, and β = -.012, t(-129) = .898, p > .05 with SATmh as the dependent variable.

H_{03} There is no significant relationship between students' self-perception of spelling competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

The null hypothesis, $H_{03,}$ was retained because the found p value for this variable is greater than .05; $\beta = .098$, $t(.904) = .368$, $p > .05$ with SATrd as the dependent variable, and $\beta = -.080$, $t(1.11) = .269$, $p < .05$ with SATmh as the dependent variable.

H_{04} There is no significant relationship between students' self-perception of mathematics competence, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

The null hypothesis, $H_{04,}$ was retained because the found p value for this variable is greater than .05; $\beta = -.080$, $t(-.865) = .388$, $p > .05$ with SATrd as the dependent variable. $\beta = -.076$, $t(-.833) = .406$, $p > .05$ were the results with SATmh as the dependent variable.

H_{05} There is no significant relationship between students' self-perception of general intellectual ability, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

The null hypothesis, H$_{05,}$ was retained because the found p value for this variable is greater than .05; β = -.104, t(-1.12) = .264, p > .05 with SATrd as the dependent variable, and β = -.096, t(-1.05) = .296, p > .05 with SATmh as the dependent variable.

H$_{06}$ There is a significant relationship between students' self-perception of global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

The null hypothesis, H$_{06,}$ was rejected. According to Table 9, *Coefficients,* self-perception of global self-worth, (GLOSW) registered β = .185, t(2.12) = .036, p < .05 with SATrd as dependent variable. GLOSW registered a β = .117, t(2.18) = .270, p > .05 with SATmh as the dependent variable.

Since the null was rejected the alternate hypothesis (H$_{a6}$) is accepted. There is a significant relationship between students' self-perception of global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities with SATrd as the dependent variable and SATmh as the dependent variable.

H$_{07}$ There is no significant relationship between students' chronological age, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

The null hypothesis, H_{07}, was retained because the found p value for this variable is greater than .05; $\beta = -.84$, $t(-.957) = .341$, $p > .05$ with SATrd as the dependent variable, and $\beta = -.039$, $t(-.428) = .670$, $p > .05$ with SATmh as the dependent variable.

H_{08} There is no significant relationship between students' specific learning disability (SPLD) and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities.

The null hypothesis, H_{08}, was retained because the found p value for this variable is greater than .05; . $\beta = .089$, $t(1.01) = .313$, $p < .05$ with SATrd as the dependent variable, and $\beta = .117$, $t(-.957) = .095$, $p > .05$ with SATmh as the dependent variable.

Summary

The purpose of this study was to investigate the relationship between self-perception and academic performance of students with learning disabilities. The descriptive statistics indicated a fairly normal distribution. Inferential statistics, specifically the stepwise regression results, highlighted the variable GLOSW as the top predictor of SATrd, but no modifiers or variables were found to be significant predictors of SATmh. GLOSW was found to be a significant predictor of SATrd at the $p < .05$ level, with a low effect size of $\beta = .18$. A discussion regarding the hypotheses results and the answer to the research question will take place in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Overview of the Study

Learning disabled students implicitly have a difficult time with academic tasks. Furthermore, many adolescent students with learning disabilities also have socio-emotional needs that are becoming increasingly more prevalent within American education systems. Furthermore, given the paucity in the literature regarding the relationship between self-perception and academic performance among adolescents with learning disabilities, it is apparent that the need for research in this area is an absolute necessity. Extant literature sources pertaining to special education students' self-perceptions and their relationship to academic performance typically include different dimensions of self-perception, without simultaneously examining different dimensions in their analyses. Recent studies on this topic seem to provide pieces of the self-perception, academic performance, and learning disabilities puzzle, but many more are required to gain a better and more definitive view of this enigmatic problem area.

This study set out to investigate the relationship between self-perception and academic performance of students with learning disabilities. The study was guided by the research question: What is the relationship between self-perception of reading, writing, spelling, and mathematics competence and global self-worth, as measured by the Harter-Renick Self-Perception Profile for Learning Disabled Students, and students' academic performance as measured by SAT-10 Total Reading and Total Math scores among adolescents at a boarding school for adolescents with learning disabilities?

A census sample of 128 student participants' records were extracted from the Green School and subjected to a multiple regression using stepwise data entry. The

predictor variable, Global Self-Worth (GLOSW) was determined to have a significant relationship with SATrd. However, no significant predictors were identified for the Stanford Achievement Test-10 Total Math scores (SATmh) as the dependent variable.

Interpretation of Findings

It may be assumed that there was no selection effect within the stepwise regression due to the modifier SPLD. Thus, there were no significant relationships between the various characteristics of the specific learning disabilities present in the population: CAPD, Asbergers Syndrome, CAPD, Comorbid, DD, SLD, and ODD; and the Stanford Achievement Test-10 Total Reading scores. Furthermore, SPLD did not have any selection effect on the Stanford Achievement Test-10 Total Math scores. It is also important to point out that SPLD shares no significant relationship with GLOSW, thus SPLD is not a confounder. The variable, GLOSW was the best predictor of SATrd, but was also found to have no significant relationship with SATmh.

Finding that no effect modifiers or predictor variables were listed as being significantly predictive of SATmh was not unexpected. Studies relative to math performance and self-perception tend to focus on individual students' self-perception of their math ability. For example, Osborn and Jones (2011) discussed a "theoretical model directly linking the structure of the self to motivation and outcomes" in their student participants. Yet, this model is totally focused on academic domain specific self-worth. A predictor variable with a similar premise to the theoretical model presented in Osborne and Jones (2011) used in this research project was self-perception of mathematics competence.

The fact that GLOSW emerged as a significant predictor of SATrd is also not entirely surprising. For example, Miller et al. (2010) reported that over a 15-week period, 87 primary school children registered increased self-esteem significantly attributable to a paired reading intervention. Their study focused more on providing evidence of a link between self-esteem and reading techniques, but aside from the emphasis on the specific reading intervention, Miller et al. (2010) is an example of an existing relationship between self-perception and academic performance, germane to reading.

Hotoulanian et al. (2010) found that "verbo-sensory motor status measured at pre-school age had long-term effects on participants' educational life-course and global self-worth" (p. 299). The time component of their longitudinal examination of global self-worth's relationship to academic performance does seem to validate this research's findings implicating GLOSW being linked to SATrd.

Mahowald (2011) also found a link between self-perception and reading, but focused primarily students' perceptions of their own reading ability as a contributing factor to reading proficiency. However, Mahowald (2011) only focused on small groups of elementary age students. Furthermore, self-perception of reading competence had no significant effect on the academic performance variables, SATrd and SATmh, in this dissertation.

Rosen et al. (2010) asserted that educational researchers often fail to include enough predictor or independent variables into their research models. When this occurs, it is rather like trying to observe the interactions of life within a vacuum and with a singularity of interest, which leans towards observations of isolation. Rosen et al. (2010) reported that "for the most part, the models attempting to explain achievement with self-

perception as an independent variable do not include some fundamental covariates of student-level academic achievement" (p. 136). Adolescents with learning disabilities are not part of the mainstream learners, thus any factors that might contribute to and elucidate their needs as learners, are critically important to address.

It is not necessarily surprising that chronological age washed out of the stepwise regression as a maturation effect modifier. Piazza et al. (2013) demonstrated that although their research sample consisted of several participants with learning disabilities and a wide range of ages; ages 4 through 63, maturation had no significant effect upon the test results (p. 1039). Furthermore, Vandevivere et al. (2014) conducted a study in which they highlighted maturation effect may be most relative and significant when studying adolescents' feelings of anxiety, and other socio-emotional observations, which are beyond the scope of this dissertation (p. 167).

Glazzard (2010) found that "the most significant factor that contributed to students' self-esteem was a positive diagnosis of 'dyslexia' and ownership of the label" (p. 65). Glazzard (2010) felt that after a deep, rich profile of their research participants was compiled, which amounted to interviews with several students from northern England, that "an early diagnosis of dyslexia is essential for creating a positive self-image and recommends that further research is necessary into the significance of the diagnosis for these learners" (p. 62). The researcher for this project feels that global self-worth could be a true aggregate of the other scales on the HRSPP, combined with an esoteric and deeply personal assessment that may be nearly impossible to assess.

Finding that no effect modifiers or predictor variables were listed as being significantly predictive of SATmh was not unexpected. Studies relative to math

performance and self-perception tend to focus on individual students' self-perception of their math ability. For example, Osborn and Jones (2011) discussed a "theoretical model directly linking the structure of the self to motivation and outcomes" in their student participants. Yet, this model is totally focused on academic domain specific self-worth. A predictor variable with a similar premise to the theoretical model presented in Osborne and Jones (2011) used in this research project was self-perception of mathematics competence (MathC). Other academic specific self-perception HRSPP subscales also served as predictor variables for this dissertation project. They included: self-perception of reading (Read), writing (Writ), spelling (SpellC), intellectual (IntAb) ability, and mathematics (MathC) competence. None of these academic specific self-perception variables was a significant predictor of mathematics performance, or reading performance.

Out of the six predictor variables and two modifiers used in this study, the predictor variable, global-self-worth (GLOSW) was shown to be an effective predictor of SATrd. The relationship indicates that as GLOSW HRSPP scores rise, the SATrd scores rise as well. However, no predictor variable or modified variables had any significant relationship with SATmh. The key question then becomes why did global self-worth predict reading? Figure 6 illustrates the paths that an adolescent's self-worth may take as it serves as the determining attenuating governor between emotions and action (Renick, 1989, p. 65).
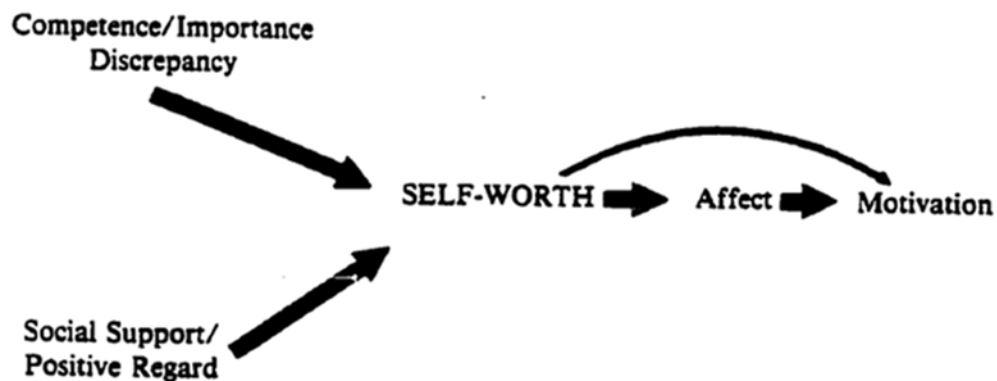
Figure 6. Global Self-Worth, Renick (1989).

As seen in Figure 6, factors such as various competencies, their importance, social support, and perceptions of regard all work to create a feeling of global self-worth for an adolescent. Thus, it may very well be that the variable "Global Self Worth" is a morphing and dynamic phenomenon, which may even be classified as a learning apparatus. Meaning, an adolescent with learning disabilities is actually learning how to be what they perceive to be as the correct way to be learning disabled. Therefore, the various competencies and other factors might all work together to present a model of what the correct or appropriate profile for a student with learning disabilities is. Thus, it seems that William James's sense of pragmatism is seen to be alive and well within this population. Therefore, the more positive regard, social support, and other experiences that manifest themselves into a students' life, the more likely they are to feel good about themselves as a person, which, as this study displays, could also positively impact their academic performance.

Kessels and Taconis (2012) conducted research that could make the aforementioned assertion about academic performance being a function of self-

perception. For example, Kessels and Taconis (2012) studied 300 adolescent students from two different European nations and found that "students acquire not only knowledge about science, but also about science culture in their science classes and that students' image of science teachers can influence their academic choices" (p. 1049). Thus, self-image, and in the aforementioned study's case the image of the student participants' science teacher conveyed, was processed via the self-perception process and seemed to subsequently manifest within the student participants' academic performance.

Furthermore, the establishment of GLOSW as a significant predictor of SATrd may indicate that academic performance becomes a factor of human will, as illustrated in Figure 7, and is inexorably connected to the perception process. Performing academically is part of perceiving the world, and includes knowledge, pragmatism, intelligence, relationships, and adaptation, relative to organizations, systems, and special education.
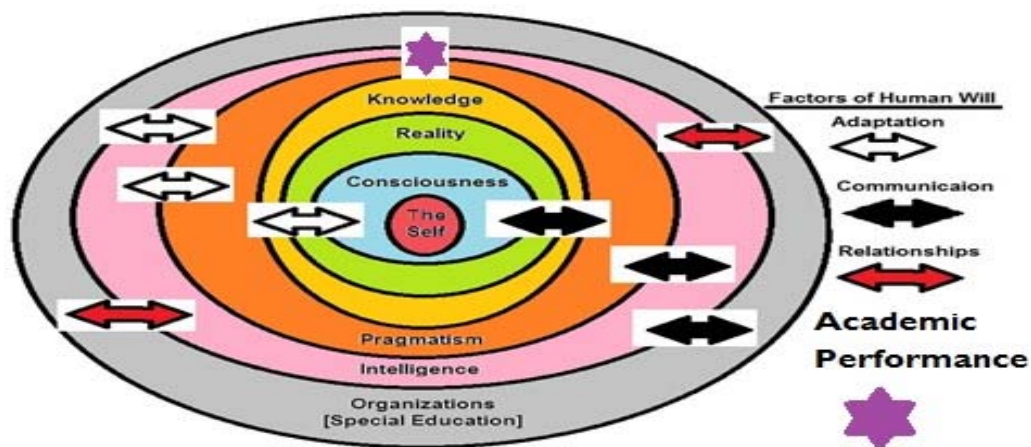

Figure 7. Academic Performance as Perception

Assumptions

It was assumed that the students at the Green School, the data pool for this research project, were allowed to take advantage of various testing modifications during the administration of the HRSPP and the SAT-10 Reading and Math Tests.   It should also be pointed out that Lai and Berkley (2012) investigated major academic databases and found 25 state testing manuals that highlighted the specifics of testing accommodation for students with learning disabilities (p. 162). Lai & Berkley asserted that these accommodations could be significantly effecting testing results for students with learning disabilities both positively and negatively. Thus, as listed in the limitations section of this dissertation, the effects that the testing accommodations may have on the student participant HRSPP, and the SATrd, and SATmh scores, is impossible to know and should be somehow addressed in future studies.

Limitations

A limiting factor of this study may be found in the construct of the HRSPP itself. Egbrink and Meijer (2011) stated that "researchers should be very careful in interpreting the total scores on the different Self-Perception Profile for Children scales" (p. 202). They specifically feel that the Harter-Renick Self-Perception Profile for Children has too many items, such as global self-worth, that simply repeat themselves. Even though Egbrink and Meijer (2011) examined 611 student participants in their study, all of them were under the age of 12, none had learning disabilities, and no effect modifiers were listed. Thus, Egbrink and Meijer's (2011) conclusions might not have so great a weight and bearing upon the research featuring the HRSPP in this dissertation.

Furthermore, it should be reported that Larwin (2010) presented findings that report that out of their 27,000 student participants, "56% of the variance in student math achievement can be explained by students' reading ability" (p. 143). The implications of Larwin's (2010) findings are beyond the scope of this research project, but the implications on investigating this relationship and its potential impact upon future research cannot be over stated.

Implications for Practice

If global self-worth, or how much an adolescent students with learning disabilities values themselves as people, is indeed a predictor of reading performance, this could necessitate the changing of pedagogy, planning, and the overall structure of learning environments to accommodate this possibility. For example, extracurricular activities, such as sports, drama, music, debate, etc. become venues in which students may not only express themselves, but also find out more about what makes them feel good about who they are as a person. The classroom experience may then become a crucial proving ground for adolescent students with learning disabilities to make decisions about what aspects of their academic experience counts towards their self-worth. Thus, teachers, coaches, and supervisors may wish to constantly insert suggestions for measuring success. For instance, instead of focusing on winning a lacrosse game, perhaps the focus should be on how much a student athlete's skills have improved over the course of a season. Perhaps students should be asked how they feel about their successful classwork or art pieces. In this manner, students then may incorporate these assessments into their academic performance germane to reading, thereby increasing their probability to meet success.

Implications for Social Change

Studying self-perception as a predictor of academic performance in adolescents with learning disabilities also promotes positive social change. It does so by helping students, school officials, parents, and society in general to realize that each life represents an individual with deep and complex perceptions of him/herself and the world. These individual views contribute to a world of interdependent perceptions. Thus, the way students with learning disabilities feel about themselves could not only affect their academic outcomes in reading, but may also impact the quality of life of other people as well. The scientific Law of Conservation of Mass states that matter cannot be created or destroyed; rather, it merely changes form. Similarly, any student whose grades are consistently low and eventually drops out of high school does not just disappear. Successes and failures of all students affect society as a whole, not just immediately, but in the long term as well. The ability to read can be a crucial element in obtaining a better quality of life. Reading scores being affected by the way students with learning disabilities feel about themselves may seem isolated and insignificant, but are actually a crucial piece to the fabric of society. For example, soaring crime rates and an increasing burden on public assistance are just some of the possible outcomes of continuously failing to place emphasis on the feelings of others, students in particular. Ideally, it should not take the physical sciences, or the educational science inherent within this research project, to help people understand that all human life connects in an infinite number of nexuses and thus each human life matters.

Recommendations for Further Study

Subsequent researchers may wish to include even more variables. A MANOVA can help to explore how independent variables influence the behavior of dependent variables and better analyze various groups that may be enter the future studies. MANOVA gives a measure for the probability of finding two or more random sources of variance of means between variables out of the same group (Green & Salkind 2005). The HRSPP measurement of self-perception is the key independent variable. Award (2007) found that "The best predictor of GPA was academic self-perception" (Award, 2007, 201). The Stanford Achievement tests, both the reading and math batteries, will be used as academic performance measures for the pilot test population. Furthermore, adding a variable that will accurately encapsulate the element of the amount of time spent at the participant's school would further enrich the variable mix and enhance the possibilities of the regression analysis revealing yet more intriguing variable relationships.

In addition, qualitative techniques may be an important feature for future research. Qualitative techniques such as, ethnography, case study, or even video-ethnography may serve to more deeply and intimately highlight a better picture of the role global self-worth may play as a predictor of academic performance. Interviews and documentation of artifacts and culture might allow for a deeper understanding of exactly how global self-worth fits into the lives of the research participants. Qualitative measures may indeed take longer, but might also provide a richer experience for the researchers to analyze.

Concluding Statement

School systems are always in need of information regarding ways to improve the quality of their various educational services. Thus, research exploring the nature of and the factors contributing to self-perception, as it pertains to students, is always of critical value. Learning disabilities are becoming more prevalent and their diagnosis more efficient; therefore, any information that may help the education community better understand adolescents' self-perception is vitally important. Furthermore, elucidating a link between these students' self-perception and their academic performance provides a vital contribution to the extant body of literature on this issue. One may only speculate why there is such paucity in the extant literature pertaining to global self-worth and academic performance. The highlighting of additional socio-emotional needs for students with learning disabilities could bring with it additional costs and funding concerns for these extra services. However, what can be more valuable than the education of a society's youth? Finding ways to help adolescent students with learning disabilities learn to value themselves highly may indeed be a key factor for transforming society and promoting positive change one student and a time.

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