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Gifted Students' Engagement In A Middle School Research And Critical Thinking Course

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GIFTED STUDENTS' ENGAGEMENT IN A MIDDLE SCHOOL RESEARCH AND
CRITICAL THINKING COURSE

by

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ABSTRACT

This action research was an analysis of a group of eighth grade gifted students 'classroom engagement in a large urban school district. Over a two-week period a variety of data were collected. Data were collected using the Student Engagement Instrument (Appleton & Christenson, 2004), which is a self-report of students' perceptions of engagement. Observation data of student engagement were collected using a teacher developed student engagement checklist, which measured academic and behavioral indications of student engagement. At the end of the two week observation period students participated in an exit interview focused on their perceptions of student engagement. The student engagement interview was adapted from an analysis of elementary student engagement carried out by Parn (2006). The data collected were analyzed according to the academic, behavioral, cognitive, and affective engagement sub-types. The findings showed that the highest levels of engagement were in the sub-types of behavioral and academic engagement. Levels of affective/psychological engagement were lower than levels of cognitive engagement. The results demonstrated that affective/psychological student engagement was positively related with cognitive engagement, behavioral engagement, and academic engagement.

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CHAPTER ONE: INTRODUCTION

Student engagement has been identified as an important indicator of student achievement (Finn, 1993; Finn & Rock, 1997; Marks, 2000). As a teacher of the gifted learner, I knew that my students traditionally did well on quantifiable content knowledge assessments as measured by criterion-referenced tests. Yet, I did not believe that a single test could provide a holistic picture of my gifted students' academic performance. This led me to determine the need for a different kind of assessment, which could provide information related to student engagement in the classroom as an indicator of their academic performance.

I used this study to more closely examine my gifted program and teacher practices as perceived by students. Upon a review of the research literature, it became apparent that gifted student engagement was one of the factors that impacted gifted student achievement. This action research was developed to measure student engagement among gifted learners enrolled in a project-based course focused on research and critical thinking in grades 6 – 8. The measurement of student engagement was used to gather student perception data of the gifted program, which could be used to improve it and affect my practices.

Purpose

The purpose of this study was to examine the level of student engagement amongst the gifted students in my classroom. In addition, this study was carried out to garner insight into students' personal perceptions of engagement in the classroom. Using

the data collected during this study, I identified specific areas of student engagement that were strong and areas that presented opportunities for improvement.

The goal of this action research was the collection and analysis of student engagement data in order to examine instructional trends inherent in my classroom. These instructional trends were discussed as an aid to further develop my classroom into a learning environment that is purposefully planned to increase gifted student engagement.

<u>Research Questions</u>

I wanted to answer the following overarching research question:

How could I increase the level of student engagement among my gifted learners? In order to respond to the former question I identified two research sub-questions. This research was developed to answer the following research sub- questions:

1) What was the level of gifted student engagement in my classroom?

2) What were my gifted students' perceptions of student engagement?

The data compiled in order to respond to these questions were collected using the Student Engagement Direct Observation Checklist (SEDOC), the Student Engagement Instrument (SEI), developed by Appleton and Christenson (2004), and a student engagement interview adapted from Parn's (2006) interview developed for use in the examination of elementary school student engagement.

Rationale

My concern for the gifted learner has developed over time during my tenure as Gifted Education Coordinator at my school and played a major role in the development of this action research. As a gifted resource teacher there is an implicit expectation that I provide a framework for developing an environment conducive to the success of gifted students. No Child Left Behind (NCLB, 2002) legislated that all students must meet minimum performance standards. Although NCLB set forth minimum standards, it did not establish a set of standards that would ensure the needs of the gifted learner would be met. The gifted learner, traditionally, is expected to do well on standardized tests such as the Florida Comprehensive Assessment Test (FCAT) or the Texas Assessment of Knowledge and Skills (TAKS). Strong performance on academic tests was one of the measures used to identify a student as gifted (Fla. Rule: 6A-6.03019). A positive relationship may exist between the level of student engagement and the level of student achievement (Doppelt, Mehalik, Schunn, Silk, & Krysinski, 2008). Using these two ideas, it was reasoned that higher levels of gifted student engagement could result in higher levels of gifted student achievement.

This action research began with my contemplation of the accuracy of teacher observation. Everyday I evaluated my classroom. I began to wonder, "Can I trust myself?" I determined that when I looked around my classroom I was really looking to see if my students were engaged. On a personal level, the desire to validate my use of teacher observation drove this research.

Initially, my research of student engagement was only in order to determine the validity of my own observations in the classroom. As my research of student engagement continued, I began to notice similarities between the components of student engagement and the social/emotional needs of the gifted learner. At the core of understanding the nature and needs of the gifted learner were gifted learners having a greater need for social and emotional supports than their traditional cohorts (Van Tassel-Baska, 2010).

Student engagement was affected by the quality of the relationships students had with their peers, teachers, and families. These relationships also proved central to understanding the social/emotional needs of gifted learners. The implications of this study were magnified due to my school's gifted population. My gifted students were all members of underrepresented groups of the gifted population. The research supports that underrepresented gifted student populations tended to need higher levels of social and emotional support than their counterparts (Beirne-Smith, Patton, & Ittenbock, 1994).

Significance of Study

Understanding the level of student engagement in my gifted classroom and how my practices may affect their performance was the primary goal of this study. The level of student engagement may be used to help understand student achievement. Achievement gaps between poor and more advantaged children and minority and nonminority students of all ages continue to be the most central problem in the field of education (Olszewski-Kubilius & Thomson, 2010). Student engagement has been shown to be related to student achievement (Marks, 2000). This is especially important when

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gifted students are being taught. The research showed that effective education of the gifted population must focus not only on coursework, but on the social and emotional needs of the student as well (Van Tassel-Baska, 2010).

One of the sub-groups identified within gifted education is underrepresented, or special, populations of the gifted. Traditionally, underrepresented gifted or potentially gifted students perceived that they had less support from classmates, friends, parents, and teachers than their counterparts. They had negative self-perception related to competence on school-work. Also, underrepresented populations of the gifted often perceived themselves as having poorer conduct and poorer relationships with others than their fully represented cohorts (Van Tassel-Baska & Olszewski-Kubilius, 1994).

This study provided me with information on student engagement in my class. Specifically, it provided me with information related to the levels of academic, behavioral, cognitive, and affective engagement. Effective inclusion gifted programs include purposefully developed plans for meeting the academic and social/emotional needs of all gifted learners. This was especially true amongst underrepresented populations of the gifted.

This study provided a measurement of student engagement as a way to better understand the effectiveness of the gifted program. There was a specific focus on the social and emotional supports provided to the students in the gifted classroom. Finding out where opportunities were in the student engagement profile allowed me to better evaluate the effectiveness of social/emotional supports provided to gifted students in my classroom.

The current research examined the social and emotional needs of the gifted. The social/emotional needs of the gifted included, but were not limited to, the relationships between the student, teacher, parent, and peers. Instruments used in the measurement of student engagement measured these same relationships.

Research of underrepresented groups in gifted education was generally focused on enhancing the identification of gifted learners. The research also examined the need for additional social and emotional supports for underrepresented populations of the gifted. The research did not propose a method for the evaluation of gifted program's effectiveness at meeting the social/emotional needs of gifted students.

Assumptions

The primary assumption was that components of student engagement are adequately similar to the social and emotional needs of the gifted. The second assumption was that student engagement can be measured. Third, a classroom environment could be developed that better meets the needs of the gifted learner by purposefully evaluating the level of student engagement. I also assumed that students in grades 6 – 8 objectively reported levels of student engagement. In addition, there was a further assumption that these students objectively reflected upon the learning environment and provided insight into the impact of student engagement in the classroom.

<center>Limitations</center>

I collected data in my classroom. This introduced specific limitations into my research. The primary limitation of this study was time. It would have been more preferably to have at least a nine-week period to collect more extensive and robust data. The study is, in part, observational data collected over a period of two weeks. A longer period of observation time may have allowed for the capture of data that were more in depth as a representation of each student. The Student Engagement Instrument (SEI) was a self-report questionnaire. Self report has been shown to exhibit general bias.

Additionally, the small sample size used in the collection of quantitative data from the SEI cannot be generalized to larger populations. The data collected during this study was applicable only to my classroom. The data were not to be used to determine a correlation between student engagement and student achievement.

<center>Definitions</center>

Throughout this research several operational definitions were adopted to clearly identify the terms used. These definitions were found in or adapted from the research done during the development of the Student Engagement Instrument. Additional terms were defined by state and county legislature as it relates to education. The definitions of terms used throughout this research are described below:

Academic Engagement: Academic engagement consists of variables such as time on task, credits earned toward graduation, and homework completion (Appleton, Christenson, Kim, & Reschly, 2006).

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Affective/Psychological Engagement: Feelings of identification or belonging, and relationships with teachers and peers (Appleton et al., 2006).

Behavioral Engagement: Suspensions, voluntary classroom participation, and extra-curricular participation (Appleton et al., 2006).

Cognitive Engagement: Self-regulation, relevance of schoolwork to future endeavors, value of learning, and personal goals and autonomy (Appleton et al., 2006).

Florida Comprehensive Assessment Test (FCAT): The FCAT is a collection of criterion-referenced assessments in mathematics, reading, science, and writing, which measures student progress toward meeting the expected level of student learning as defined by NCLB through the Sunshine State Standards (SSS) benchmarks (FLDOE, 2012).

Florida Department of Education (FLDOE): The FLDOE was designed to establish policy and to enforce federal educational laws regarding privacy and civil rights within the state of Florida. The FLDOE mission statement follows and explains the goal of the FLDOE.

The purpose of the FLDOE is to

Increase the proficiency of all students within one seamless, efficient system, by

providing them with the opportunity to expand their knowledge and skills through

learning opportunities and research valued by students, parents, and communities,

and to maintain an accountability system that measures student progress toward

the following goals:

Highest student achievement

Seamless articulation and maximum access

Skilled workforce and economic development

Quality efficient services

Mission Statement

Florida Department of Education

(FLDOE, 2012)

Gifted Learner: In Florida the gifted learner is defined by three criteria.

1) An Intelligence Quotient (IQ) of two standard deviations above the mean on   an

individually administered measure of intelligence.

2) Display a majority of behavioral characteristics typical of gifted children.

3) Demonstrate a need for the gifted program (Fla. Rule: 6A-6.03019).

Student Engagement: Engagement is viewed as a multi-dimensional construct

comprised of four subtypes: academic, behavioral, cognitive, and affective/psychological

engagement (Appleton et al., 2006).

Underrepresented/ Special Populations of the Gifted: Special populations of gifted children include, but are not limited to, children who are from cultural, linguistic, and ethnically diverse backgrounds (National Association for Gifted Children [NAGC], 2011).

Summary

This chapter provided the research problem, rationale, significance, research questions, assumptions, limitations, and definitions. The significance of the study was based on the need for, and lack of, a means to measure whether the social and emotional needs of the gifted population were being met, specifically, in my classroom.

Chapter two examined research related to student engagement, student achievement, and gifted education. These topics were combined in order to support the purpose and significance of this research. Chapter three was an examination of the research methodology including data collection procedures. Included in the methodology is a description of the study design, school setting, and study participants. In addition, the research-based foundation used in the development of the research and critical thinking course was also explained. It also contained a brief description of the instruments and the data collection procedures used in this research.

Chapter four was an analysis of the data as it related to my proposed research questions. A triangulation of data were used to answer each of the fore stated research questions. Both quantitative and qualitative analyses of data were used.

Chapter five provided a final discussion of the action research study. The focus of these discussions included an examination of how this study fits with prior research.

The discussion is carried further through the discussion of the research implications and the influence the research had on my practice as an educator. Further research related to this study could include an examination of gifted student's perception of engagement as compared the school and/or district level assessment of student's perceived levels of engagement.

CHAPTER TWO: REVIEW OF LITERATURE

Introduction

This literature review provided a foundational framing for developing the connection between meeting the needs of the gifted learner and the level of gifted student engagement in the classroom. This literature review also provided a conceptual framework to support the focus of this research and its importance to meeting the needs of the gifted learner. The topics that emerged through the development of this literature review were student engagement, gifted education, and the role student engagement played in student achievement.

Student Engagement

Student engagement is a construct that has evolved over time (Chapman, 2003). Beginning in the mid 1970's, the idea of student engagement has grown from simply time on task to an in-depth study of student behavior and the psychological foundation upon which those behaviors are constructed (Spanjers, Burns, & Wagner, 2008; Brophy, 1982; Berliner, 1978; Natriello, 1983). The current understanding of student engagement is based on the notion that student engagement was comprised of three or more sub-types (Finn, 1989). The underlying subtypes were understood to interact with each other and resulted in overall student engagement (Skinner & Belmont, 1993). Recently, there has been resurgence in the study of student engagement. At the post-secondary level student engagement has garnered a national focus and resulted in the use of standardized instruments of engagement common to colleges and universities across the nation. There was a formidable body of research speaking to the measurement of student engagement

in the K-12 environment (Appleton & Christensen, 2006; Fredricks, McColskey, Meli, Mordica, Montrey, Montrosse, Mooney, 2011). Although the abundance of research was promising, there was still the lack of a standardized instrument that could be used across the country in the K-12 environment.

Student engagement was intertwined with the needs of the gifted learner. The research demonstrated that the gifted learner was known to need higher levels of social/emotional support than their non-gifted counterpart (Van Tassel-Baska, 2010; Reis & Renzulli, 2010). At the heart of student engagement was the social and emotional construct. In the vernacular of student engagement, social and emotional needs were measured using the cognitive and affective sub-types. Higher levels of cognitive and affective engagement were shown to lead to higher levels of behavioral and academic achievement (Van Tassel-Baska & Olszewski-Kubilius, 1994). The foundation of this literature review was the connection between engagement and the social and emotional needs of the underrepresented populations of the gifted. The final piece explored in this literature review was the connection between engagement and achievement (Singh, Granville, & Dika, 2002; Wang & Holcombe, 2010). It was the synthesis of these ideas that provided the clear conceptual framework on which this research was based.

The definition of student engagement has changed over time. Chapman (2003) provided a short timeline in the paper *Assessing Student Engagement Rates*. Historically student engagement was defined by time on task. Berliner (1978) did a study of the way time was used in the classroom. He developed a construct called academic learning time (ALT). ALT was used during his study as a measure of time spent in the engagement of

tasks, or simply time on task. Learning time was measured through direct observation. He discovered that the most potent predictor of student achievement was the amount of time spent engaged in tasks in the classroom. As a result, he equated ALT (Time on Task) to learning (Berliner, 1978). Another study found that teachers who moved directly into a task had students more engaged than teachers who did a presentation before moving on to tasks (Brophy, 1982). Time on task is still recognized as a component of student engagement. The idea of time on task as a measure for student engagement was recently studied by Spanjers et al. (2008) and was found to be a valid component of student engagement.

The evolution of student engagement was marked first by the expansion of student engagement to include a psychological aspect. It evolved further by the identification of additional student engagement sub-types. Student engagement began as purely a measure of time on task. As time progressed, student engagement grew to become the willingness of a student to participate in the school day routine (Natriello, 1983). Natriello (1983) found high school students that were unwilling to participate in school day activities had higher dropout rates than students that were willing to participate in school. Ultimately, Natriello (1983) demonstrated that high school disengagement is defined as a lack of student participation.

The progression of student engagement was pushed along by Finn's (1989) study. The previous studies on student engagement focused on only one component such as time on task or willingness to learn. In Finn's (1989) study, engagement was expanded to include two separate components. Finn (1989) demonstrated that student engagement was

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comprised of participation and identification. Participation can be described as

behavioral engagement and included participation in class and school. Participation was

similar to the traditional concept of time on task. Identification was related to

psychological, or affective, engagement. Identification included school identification,

belonging, and the degree to which the student valued learning (Finn, 1989).

Finn's (1989) inclusion of a psychological aspect to engagement represented a

shift in the way that researchers thought about student engagement. Skinner and Belmont

(1993) further developed Finn's use of two sub-types of student engagement. They

expanded the definition of student engagement to include three sub-types.   Behavioral

engagement was defined as doing school work and following rules. It was similar to

earlier measures of time on task. Cognitive engagement was defined as motivation, effort,

and strategy use. This definition was similar to Natriello's (1983) definition that included

the willingness to learn. Emotional engagement was defined by a student's interests,

values, and emotions.

Although Skinner and Belmont (1993) demonstrated the importance of

relationships, they did not include relationships in their definition of student engagement.

The understanding of the importance of student relationships prompted other researchers

to look at student engagement in a completely different manner,

Traditionally, engagement was thought to be composed of sub-types. The

researcher identified sub-types then would develop indicators based on the identified sub-

types. The indicators were measured and applied to the appropriate sub-types. Finally,

the sub-types were recombined to give an overall view of student engagement. The sub-

type was developed first and was followed by the determination of indicators. Appleton and Christenson (2004) proposed a reversal of this thinking. They developed indicators first and then placed those indicators into related groups. The groups of indicators were measured and sorted into four sub-types of student engagement; academic, behavioral, cognitive, and affective/psychological. The understanding of student engagement presented by Appleton and Christenson (2004) was used in order to carry out this research. Specifically, their research definition identified the term student engagement as a combination of four engagement sub-types. Academic engagement was indicated by observational data including time on task and assignment completion. Academic engagement was essentially a measure of meeting the mandatory minimums. This was in contrast to behavioral engagement. Behavioral engagement was indicated by a student's choice to be psychologically involved in class in a positive manner. Behavioral engagement was best represented by a student volunteering at school, asking a question voluntarily, or playing a sport. The key was that behavioral engagement involved volunteering on the part of the student and extended beyond merely academic engagement or compliance behavior. An example of this distinction is in the categorization of attendance. Appleton and Christenson (2004) assumed that attendance was voluntary and, therefore, was an indicator of behavioral engagement.

Cognitive engagement was based on the control and relevance over schoolwork and future plans and goals. Psychological, or affective, engagement was based on a student's perception of belonging to the school community. This sense of belonging was extended to include relationships with peers, teachers, and family. If the student

perceived support for education embedded in these relationships, then it was determined

that the student had a positive measure of affective/psychological engagement (Appleton

& Christenson, 2004).

<center>Measuring Engagement</center>

Chapman (2003) focused on the importance of alternate forms of assessment to

measure student engagement. Research demonstrated that student engagement was a

national focus, at least in post-secondary education. Several surveys of student

engagement had appeared over recent years. The first of these surveys to be used on a

large scale was the National Survey of Student Engagement (NSSE). The NSSE was first

given in 2000. The NSSE was further expanded and the development of two supporting

surveys occurred in the years following the initial use of the NSSE. The Faculty Survey

of Student Engagement (FSSE) was first administered in 2003 and provided a new

dimension to the measurement of student engagement. This new dimension was

assessment of the faculty's perceptions of student engagement. The Beginning College

Survey of Student Engagement (BCSSE) was first administered in 2007 and is used to

measure the student engagement of college freshman.

.   On the K-12 front, the topic of student engagement has blossomed to the degree

that Fredricks et al. (2011) released a paper titled *Measuring Student Engagement in*

Upper Elementary through High School. This paper was a description of 21 instruments

currently used as a means for assessing student engagement. There was no nationally

accepted measure of K-12 student engagement. The content of this report spoke to the

importance of student engagement. In addition, it pointed to the current ambiguity in the

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measurement of student engagement. Together, the current focus on student engagement in the post-secondary education and the relative lack of equally standardized K-12 counterparts are important research areas which should be investigated.

The Student Engagement Instrument (SEI) was developed by Appleton & Christenson (2004) in order to measure student engagement at the secondary level. A validity study followed in 2006 and the SEI was determined to be internally valid (Appleton, Christenson, Kim, Reschly, 2006). Most recently the validity of the SEI was revisited and the researchers concluded that the SEI was valid and seemed appropriate for use in both the middle school and the high school setting (Betts, Appleton, Reschly, Christenson, & Huebner, 2010).

Gifted Education

Traditionally, the purpose of gifted education was to provide a relevant and rigorous curriculum that goes above and beyond the standards (FLDOE, 2007). Because the goals of gifted education dictated a curriculum above and beyond the minimum requirements for competence, there was little incentive for schools to focus on the gifted population.

One of the possible indicators of an unidentified gifted learner was above average performance on the standardized tests used within the school or district. The fact that the gifted population traditionally performed well on standardized tests sometimes caused gifted students to be overlooked by schools when academic achievement was examined. Often overlooked were significant facts regarding the gifted learner. Gifted students do

underachieve (Reis & McCoach, 2000). Gifted students do drop out of school because of a lack of engagement and a failure to achieve (Renzulli & Park, 2000).

Educational legislation required students to meet only a minimum standard of competence. Legislation such as No Child Left Behind has mandated the use of standardized testing in order to assess a student's level of achievement (NCLB, 2002). This would not be an issue but funding based on achievement tended to stop once a student has met the prescribed level of competence as described by the grade level standards (Baker & McIntire, 2003). This notion of being taught only to competence was at the heart of my motivation in the development of this action research.

Reis and Renzulli (2010) examined the environment of gifted education and addressed a common concern educators expressed. They ask the question, "Is There Still a Need for Gifted Education?"   They found that, yes, gifted education was necessary in order to best serve the gifted student. Reis and Renzulli (2010) research demonstrated that the gifted student is better served if enrolled in a gifted education program.

As more focus was placed on the need to meet minimum competencies, the focus has drifted towards ensuring that every student can meet the minimum requirements for promotion. In order to provide each student the best chance to meet the minimum competencies funding was distributed based on academic needs. This distribution did make sense. The school was being rated based on the number of students on grade level, not above. Because of this, funding tended to be directed at those struggling students failing to meet the minimum prescribed standards (Gallagher, 2004).

The distribution of funding was only one of the ways the gifted population may have been underserved. Many districts began to move away from pull-out gifted courses. This was primarily due to the overall shift towards inclusion models throughout special education. The Individuals with Disabilities Education Act Amendments of 1997 cast a national spotlight on the inclusion of special education students in the regular classroom. The intent of the amendment was to indicate that all educators were to share in the responsibility for services provided to all students, including those with disabilities (OSERS, 1997). As the gifted student moved into the regular classroom, their education plans (EP) were changed to reflect a change in the services being offered by the school (Fla. Admin. Code R. 6A-6.030191, 2004). A gifted student in the inclusion classroom, in most cases, faced a more difficult time finding the rigorous curriculum that was important to ensuring their success. Once the student was in the regular classroom, it became the gifted teacher's responsibility to provide differentiated instruction in order to ensure the needs of the gifted learner were being met (Van Tassel-Baska, 2010).

In 2011 Reis and Renzulli asked, "Is there still a need for gifted education?" Although the researchers found several positive characteristics of gifted education in a recent examination of the need for gifted programs, there was still a lack of representation by minority and student with low socioeconomic status (SES) in gifted education programs throughout the nation (Reis & Renzulli, 2011). A secondary finding was that there was a demonstrated need for these underrepresented populations to be better served through the public school system once identified as gifted learners. Gifted learners generally needed higher levels of academic, social, and personal support than

their regular education counterparts. Further research has shown that the social and emotional needs of underrepresented population are even greater than the needs of their fully represented counterparts (Reis & Renzulli, 2011).

<center>Underrepresented Populations of the Gifted</center>

Special populations of gifted children include, but are not limited to, children who are:

> • From Cultural/Linguistic/Ethnically diverse backgrounds
>
> • Gay/Lesbian/Bisexual/Transgendered/Questioning (GLBTQ)
>
> • Twice-exceptional Gifted Children with Disabilities
>
> • Highly and Profoundly Gifted
>
> • Experiencing the impact of gender issues
>
> • From Low Socio-Economic Status (SES) backgrounds
>
> • Impacted by geographic issues, such as urban and rural settings.

<div align="right">Mission of the Special Populations Network

National Association of Gifted Children

(NAGC, 2011)</div>

Research has collectively demonstrated that underrepresented populations, once in the gifted program, generally needed higher levels of academic, personal, and social support. Levels of academic, personal, and social support can be measured using affective/psychological engagement and cognitive engagement (Brown, 2009).

Students from underrepresented populations of the gifted perceived that they had weaker relationships at school than fully represented populations. They also believed that they were not as intelligent as and more likely to be behavior problems than fully

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represented gifted students (Van Tassel-Baska & Olszewski-Kubilius, 1994). Students of low socio-economic status have a greater risk for social and emotional problems (Beirne-Smith et al., 1994). Gifted students who are living in poverty also face challenges and require special attention and support to achieve to their potential. Underrepresented populations of the gifted are at higher risk for socio-emotional issues than fully represented cohorts (Stormont, Stebbins, & Holliday, 2001).

One of the solutions proposed to meet the socio-emotional needs of underrepresented gifted population was socialization. Socialization was essentially teaching a student how to increase affective and cognitive subtypes of engagement. Socialization of urban students was necessary to prepare them personally, socially, and academically (Kaplan, 2011). Brown's (2009) research provides support for the use of socialization as a method for increasing affective and cognitive engagement.

Brown (2009) examined the academic and affective profiles of low-income, minority, and twice-exceptional gifted learners. They used this information to provide a better understanding of the role of gifted program in the development of student self identity. They found that membership in an early, ongoing, and purposeful developed gifted program resulted in higher levels of cognitive and affective engagement among underrepresented gifted students.

Jacob K. Javits Gifted and Talented Students Education Act, focuses on funding projects designed to develop ways to identify and educate traditionally underrepresented gifted or potentially gifted students (NAGC, 1988). The Javits Act was built upon the same premise used in this research. If the needs of the gifted learner were being met,

then there would be a positive impact on student engagement. If there were a positive impact on student engagement, then there would be a positive impact on student achievement.

Student engagement was an important part of a student's school experience because of its logical relationship to student achievement (Marks, 2000). Finding research that tied student engagement directly to student achievement was difficult. The research that was found showed that there was a strong positive relationship between engagement and achievement when discussed in relation to diverse populations of students (Finn, 1993; Finn & Rock, 1997). Lack of engagement adversely affected student achievement and may have led to bad behavior and may have resulted in student dropout (Newmann, 1981, 1992). These studies supported the framework that achievement was correlated with student engagement.

Achievement in language arts was demonstrated to be correlated with student engagement (Van de Gaer, Pustjens, Van Damme, & De Munter, 2009). Van de Gaer et al. (2009) took data from the Longitudinaal Onderzoek Secundair Onderwijs (LOSO) project (Longitudinal Research Project in Secondary Education) that started in 1990 and followed a cohort of Belgian students during secondary school and afterward (age 12–21). They examined the relationship of gender differences and achievement in language arts over time. A secondary result of their study was that there is a positive correlation between achievement in language arts and levels of student engagement. This correlation was seen in nearly every student assessed and was demonstrated by data showing that

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students who showed a smaller decline in school engagement also showed a higher increase in language over time (Van de Gaer et al., 2009).

Singh et al. (2002) examined the relationship between mathematics and science achievement and student motivation, interest, and academic engagement. As a result, Singh produced evidence that strongly supported the positive effects of motivation, interest, and academic engagement on science and mathematics achievement.

Wang and Holcombe (2010) carried out a study of urban seventh and eighth graders and examined the relationship between student engagement and student achievement. They determined that student achievement was increased when teachers provided consistent positive praise based on the improvement of the student. The praise was individualized and rewarded effort rather than correct answers. This had the side effect of creating a learning environment that was free from the fear of embarrassment. The researchers concluded that student achievement was positively related to a learning environment that minimized the fear of embarrassment. In addition, they determined that the minimization of the fear of embarrassment in the classroom increased the use of cognitive strategies by the students. This in turn resulted in higher levels of student achievement (Wang & Holcombe, 2010).

A negative relationship between engagement and achievement was demonstrated, as well. Low levels of engagement were associated with disengagement. One study examined students at 69 high schools in Canada. The students' levels of engagement were assessed using an instrument used in Canada called New Approaches New Solutions (NANS). Several years later, national data were used to determine the level of

dropout among the sample. The study provided evidence supporting the proposal that low levels of adolescent behavioral, affective, and cognitive engagement in school are related with higher levels of dropout (Archambault, Janosz, Morizot, Pagani, 2009).

<div align="center">Synthesis and Summary</div>

The purpose of this literature review was first, to identify the current understanding of student engagement. Once the current understanding of student engagement was developed to its current perspective, the importance of the measurement of student engagement became the focus. The need for a standardized instrument to measure student engagement at the K-12 level was supported by the volume of instruments currently available.

The conceptual framework was situated in research as it related to types of student engagement (Appleton & Christenson, 2004) and the social and emotional needs of the gifted (Van Tassel-Baska, 2010). The chapter concluded with a review of research on the relationship between student engagement and student achievement.

If the needs of the gifted learner are being met, then there should be a positive impact on student engagement. If there is a positive impact on student engagement then there should be a positive impact on student achievement. The goal of any educational program is to increase student achievement; therefore better meeting the needs of the underrepresented gifted student should result in a more effective gifted program.

The following chapter provided an explanation of the methodology used in this research. Included in the methodology is a description of the school setting. The school setting is followed by a description of the course during which the data was collected.

The study participants were described with special attention to the underrepresented populations of the gifted. The instruments used during this study are outlined and an explanation of the use of each instrument in data collection and data analysis rounds out the chapter.

CHAPTER THREE: METHODOLOGY

Introduction

The goal of the gifted education program was to meet the needs of the gifted learner. This action research collected data on student engagement among the gifted students in my classes. The students self-reported their beliefs about the level of engagement using a student engagement questionnaire. To triangulate data collection methods, systematic, direct, teacher observation with an engagement checklist was used over a two week period. At the end of the two week period, students participated in an exit interview focused on exposing their perceptions of student engagement.

This chapter examined the study design, school setting, the course used in this study, and the participants. In addition, the instruments used in data collection will be explained. A description of the procedures used in data collection was provided for each instrument used in this research. In addition, an overview of the research approval process was also included to construct a research timeline

Design of the Study

Merriam Webster's Online Dictionary (2012) defines action research as "the use of techniques of social and psychological research to identify social problems in a group or community coupled with active participation of the investigators in group efforts to solve these problems." Action research was an appropriate research design because my intent was to affect the closest community to me, my students. In my role as classroom instructor the need to better understand my classroom environment puts me at the center of my intended research. I was an active participant in the research process. These facts

established my use of action research as the appropriate model for this study. This study focused on the measurement of gifted student's perceptions of engagement in my classroom.

Setting and Participants

School Setting

This study took place at a middle school located in an urban core of Central Florida. Most recent enrollment data showed 704 students in grades six through eight, with an age range from 12 years old to 17 years old. The student demographics reflected the community surrounding the school. Current enrollment figures estimated student demographics at 92% African-American, 4% Hispanic, 2% White, 1% Asian, and 1% Multiracial. The percentage of students eligible for free or reduced price lunch was 96% and this entitled the school to receive federal funds from Title I. The gifted population included a total of seven students.

The Course

The course students participated in and the focus of this research was a critical thinking course. It was developed as a general education course with a focus on meeting the needs of the gifted learner. The primary focus of the course was on increasing the relevance of subject-area courses. This was accomplished by using the skills learned in core classes in a real-world, project-based learning environment. The administration and I developed this course as an elective for all students and all students were invited to enroll. Gifted student enrollment was made compulsory in order to meet the need for

differentiated instruction as standards mandated by the gifted student education plan. The

course focused on research and critical thinking standards identified by the FLDOE.

Project-based units were used throughout the research and critical thinking course in

order to increase the relevance of school-work. The units were founded on the definition

of project based developed by Mioduser and Betzer in 2008.

Participants

The participants in this study were the site school's gifted learners. The school's

gifted learners were required to be enrolled in this course in order to ensure the

accommodations had been met as described in their education plan (EP). I had a total of

seven gifted students in my research and critical thinking course. This was a surprisingly

low number of students identified as gifted based on total student enrollment. Students in

the study were selected according to several criteria. First, in order to be included as a

participant the student must have been enrolled at the study site school. Second, students

must have been identified as gifted according to the Florida Guidelines for the

identification of the gifted (Fla. Admin. Code R. 6A-6.03019, 2002). Finally, to be

included in the study, the student had to be enrolled in the research and critical thinking

course offered by the study site school. Table 1 provides a more detailed description of

the study participants. The table includes grade level, gender, race, and whether the

participant qualified for free/reduced lunch (SES). Based on the descriptive demographic

data, all of the students included in this study were identified as members of

underrepresented populations of the gifted.

Table 1: *Descriptive Demographics of the Study Participants*

Participant	Grade	Gender	Race	SES
Bob	6	Male	Black	Free/reduced lunch
Jim	8	Male	Asian	Free/reduced lunch
Paula	7	Female	Multiracial	Free/reduced lunch
Sue	8	Female	Black	Free/reduced lunch
Amy	6	Female	White	Free/reduced lunch
Jack	6	Male	Hispanic	Free/reduced lunch
Sara	6	Female	Multiracial	Free/reduced lunch

All participants except Sue were identified through compulsory elementary school gifted screenings. Sue was identified in grade 6 through teacher recommendation.

Instruments

The purpose of this study was to measure student's perception of engagement amongst the gifted population at my school. The instruments used in this research were chosen to provide data that could be used to answer the research questions. Student engagement was measured in three ways. The students completed the Student Engagement Instrument (SEI), I used the Student Engagement Direct Observation Checklist (SEDOC) to collect systematic direct observations through the use of a daily

checklist, and the Student Engagement Interview examined the students' perception of engagement. The use of a wide variety of instruments was supported by Chapman (2003) and provided for a triangulation of data sources.

<div align="center">Student Engagement Instrument</div>

Quantitative data collection was accomplished through the use of the Student Engagement Instrument (SEI). The SEI was a 33 item self-report questionnaire taken by students to assess their levels of engagement (Appendix F). The SEI was developed through the use of an extensive literature review and refined through its use among students from diverse populations. Copyright permission for the use of the SEI was obtained from both the author and the publisher of the instrument. The copyright information is included in Appendix H.

The use of the SEI allowed for the separate measurement of affective/psychological and cognitive sub-types of overall student engagement. The data were collected across five distinct factors or scales of engagement. They were Teacher - Student Relationship (TSR), Control and Relevance of School Work (CRSW), Peer Support for Learning (PSL), Future Aspirations and Goals (FG), and Family Support for Learning (FSL). Affective/psychological engagement was measured with nineteen items that were measured by the TSR, PSL, and FSL scales. The number of questions measuring each of the factors was TSR = 9, PSL = 6, and the FSL = 4. The remaining fourteen items measured cognitive engagement. The scales that comprised cognitive engagement were, with 9 items, CRSW, and with 5 items, FG. The SEI used a Likert-Type response scale with answer choices from 1 - 4 with 1 being strongly agree and 4

being strongly disagree. Validity of the SEI was originally established by Appleton et al. (2006). Most recently, Betts et al. (2010) confirmed the results obtained in the original validity study and determined correlation coefficients of a minimum of 0.32 to a maximum of 0.81 for all factors measured by the SEI.

Student Engagement Interview

The student engagement interview was made up of seven open-ended questions meant to expose students' ideas on classroom engagement (Appendix B). Parn (2006) used a similar interview in her action research on student engagement. Copyright was obtained from both the author and the publisher of the Student Engagement Interview. The copyright permission is included as Appendix G. Parn's (2006) study focused on the use of an engagement rubric coupled with the interview questions. I found the interview questions helpful when developing my interview. I included the interview as a data collection method in order to provide students with talk time. The other instruments used in this action research are relatively close-ended and did not provide students with the ability to share their ideas. The interview process was audio recorded and transcribed. Multiple readings of the transcriptions were completed to identify themes and patterns..

Student Engagement Direct Observation Checklist

In order to develop the Student Engagement Direct Observation Checklist (SEDOC) I combined ideas from the classroom walkthrough procedures used for teacher assessment and the indicators of behavioral and academic engagement described by Appleton & Christenson (2006). The duration of the systematic observation using the

SEDOC was two weeks. This shortened observation time was necessary because of an administrative shift in the design of the research course. I was given two weeks to complete my study by school-based administration. At the end of the two week period the research course became a reading class. The SEDOC could have been implemented more reliably over a longer observation period, but due to the administrative constraints all observations had to be completed over the allotted two week period.

The checklist was in two sections. Section one is made up of daily observations. These observations were traditional measures of student engagement. The measures in section one are attendance and asking questions. Also under the attendance category, observations were recorded regarding time out of class for restroom breaks and other concerns. Section one provided a measure of behavioral engagement as defined by Appleton et al. (2006).

Section two made up the systemic direct observation by time interval. Section two was completed in real-time as the student was involved in classroom activities. The tally sheet allowed for one observation every ten minutes while the student was in class beginning with the start of each period. The tally sheet was completed based on the following observed behaviors; out of class, on task, off task disruptive, and off task non-disruptive. Section two of the SEDOC was meant to measure academic engagement as defined by Appleton et al. (2006). The SEDOC can be viewed in its entirety in Appendix D. Appendix E contains the operational definitions used while completing the SEDOC.

<center>Procedures</center>

The procedures used to carry out this action research are outlined in the following section on data collection.
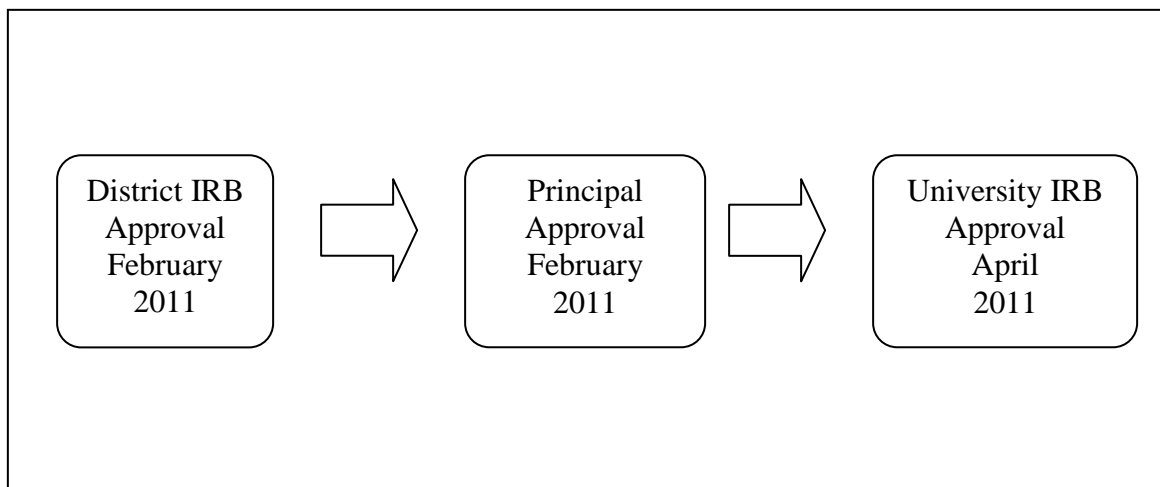
<center>Data Collection</center>

District research request forms including a research proposal were submitted in January of 2011. District approval was granted in January 2011 (Appendix B). The district approval was brought to the principal and the approval to carry out the research was granted by the principal in February 2011. Upon receipt of district and school approval an Internal Review Board (IRB) Form was submitted to the Office of Research of the University of Central Florida. In April of 2011 the IRB made a Not Human Research Determination (Appendix A). After approval was granted by the University, the district, and the principal, students and parents were informed by letter and phone that all of the materials would be kept confidential and that privacy would be protected through the use of pseudonyms throughout the research. In addition, students and parents were informed that they could withdrawal from the research at any time and for any reason. They were informed that a request for withdrawal from the study could be either written or verbal. Once the request was received, all data collected related to the specific participant would be destroyed.

The completed hard copies of the student engagement instruments and SEDOCs were identified only by letter and stored in a locking file cabinet. Responses from the SEI were also processed electronically and entered into my password protected teacher workstation. Audio recordings were taken using the teacher workstation microphone

<center>34</center>

using Audacity™ to convert the audio recording into a computer file. The computer file

was stored on a password protected flash drive. A key linking each student to their

assigned letter was written on a piece of paper and kept in a locking file cabinet.

Figure 1 is a representation of the approval timeline associated with this study.

Figure 1. Approval Timeline for Data Collection in this Study.

IRB = Institutional Review Board

Student Engagement Instrument

On the first day of the data collection period the participants completed the SEI.

The SEI was given according to Appleton and Christenson's (2006) instructions that the

SEI should be given orally to aid in comprehension of each item. Graphic

representations were made displaying the relative significance of the factors assessed by

the SEI. SEI data were used to identify themes which emerged based on the students

responses.

Student Engagement Direct Observation Checklist

At the end of each day the number of tallies for each category was totaled. The total of each category were compared.   The top three categories were identified and the lowest three categories were identified. This process repeated every five days, or one week. The process was completed for the final time on Day 10, or the end of week two, and marked the end of the data collection through direct observation. Data analysis focused on comparisons between the categories on the SEDOC. Further analysis compared the overall results of the SEI with the results of the direct observation. The results of the SEDOC were used to measure academic and behavioral sub-types of engagement.
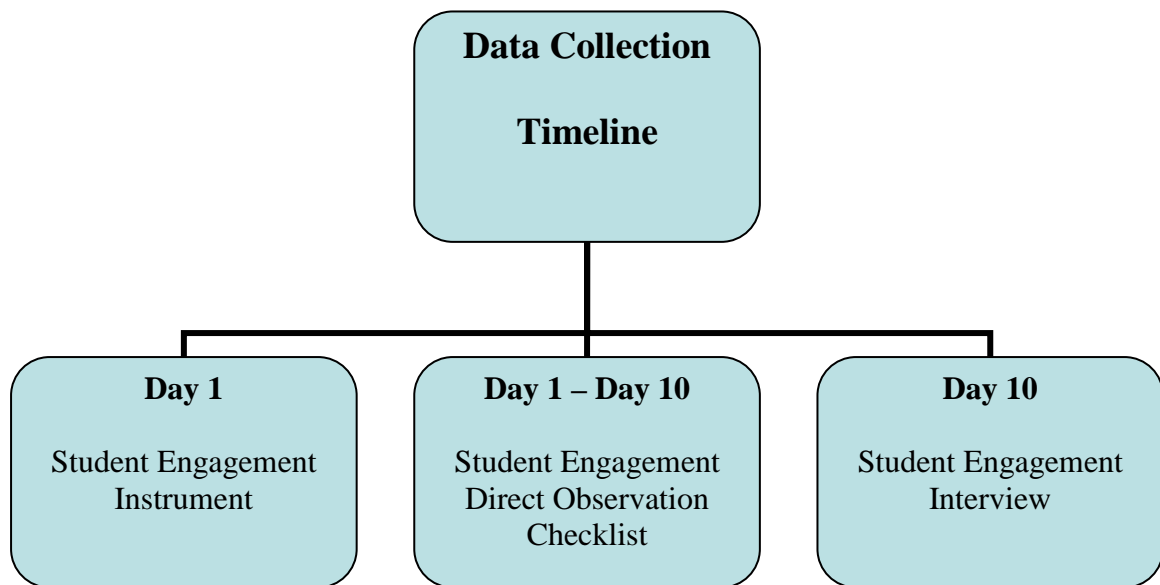
Student Engagement Interview

On the final day of the data collection period, seven students participated in the Student Engagement Interview. The student interviews were audio recorded and transcribed. The student interviews were audio recorded and transcribed. Each interview lasted approximately 3 – 10 minutes. The transcriptions and audio recordings were analyzed for patterns. These patterns helped to facilitate categorization. Patterns and/or themes were listed until no further patterns were recognizable. Categories were identified based on the number of data associated with the category.

The transcription was also coded using the factors of the SEI. This allowed for the thematic grouping of the data. The number of data related to each of the five themes were compared and analyzed based on frequency of theme appearance. This analysis

allowed for some level of comparison between the results of the student interview and the results of the SEI.

Figure 2 shows the total data collection timeline.

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                      │  Data Collection    │
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        ┌────────────────────────┼────────────────────────┐
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│      Day 1        │  │  Day 1 – Day 10   │  │     Day 10        │
│                   │  │                   │  │                   │
│ Student Engagement│  │ Student Engagement│  │ Student Engagement│
│    Instrument     │  │ Direct Observation│  │     Interview     │
│                   │  │     Checklist     │  │                   │
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Figure 2. Data Collection Timeline by Day during the Data Collection Period

<u>Summary</u>

The data collected in this study were meant to reveal the level of student engagement among the gifted students at my school. My school was an urban, Title 1, middle school in Central Florida. The gifted program was made up of students representing special populations of the gifted. In order to measure student engagement three instruments were used. The SEI was used to measure the students' affective/psychological and cognitive engagement. The affective/psychological and cognitive subtypes of engagement were based on intrinsic student beliefs and were not

easily measured by direct observation. Behavioral and academic engagement was

measured with the use of the SEDOC. The student interview was used to elicit student

perceptions of engagement. These perceptions included the effects of whole classroom

student engagement on the individual student. These three instruments together were

used to provide a broad view of student engagement among the gifted population at my

school. The results of this study were used to answer the following research questions:

       1) What was the level of student engagement in my gifted classroom?

       2) What were my gifted students' perceptions of student engagement?

In Chapter 4, the data results are discussed and the research questions answered.

CHAPTER FOUR: RESULTS AND ANALYSIS

Introduction

The purpose of this study was to measure student engagement among the gifted students at my school. In order to measure student engagement, three instruments were used. Affective/psychological and cognitive engagements were measured using the Student Engagement Instrument (SEI). The SEI was a self-report questionnaire. Although there were limitations associated with the use of a self-report instrument, the SEI was the best fit for the data collection goals of this study. The affective and cognitive subtypes of engagement are based on intrinsic student beliefs and were not easily measured by direct observation. The definitions of these engagement sub-types point to the need for self-reflection. The examination of student belief systems was essential to the measurement of cognitive and affective engagement and was measured using the student engagement interview.

Behavioral and academic engagements were measured using the Student Engagement Direct Observation Checklist (SEDOC). Academic engagement as operationally defined was the most basic subtype of student engagement. The academic sub-type was best represented by time on task, being on grade level, completing assignments, and overall compliance with the minimum expectations of school life.

The behavioral sub-type was easily confused with academic engagement. The distinguishing characteristic that separated behavioral engagement and academic engagement was the student's voluntary participation in the school environment. The behavioral sub-type was measured by the SEDOC and can be best described by its

indicators. Asking a question during class was an indicator of behavioral engagement and was measured by the SEDOC. Attendance as measured using the SEDOC and attendance data was an additional measured indicator of the behavioral engagement sub-type.

The SEI, the SEDOC, and the Student Engagement Interview were used to provide a broad view of student engagement among the gifted population at my school. The results of this study were used to answer the following research questions:

1) What was the level of student engagement in my gifted classroom?

2) What were my gifted students' perceptions of student engagement?

These research questions acted as the foundation for the presentation of data in this chapter. This chapter was organized by the research questions. Each research question was broken down into sub-topics. The data were interpreted based on these discrete topics. The current level of student engagement was described using each of the four sub-types of student engagement. Student perceptions of engagement were categorized based on themes that emerged throughout the analysis of student responses to the Student Engagement Interview and were supported with data from the SEI and the SEDOC.

Data Analysis

In order to respond to research question number one, the results of the SEI and SEDOC were used. The SEI was used to measure affective/psychological and cognitive engagement. The SEDOC was used to measure academic and behavioral engagement.

The results of each of the student engagement subtypes are as follows. The results included an overall comparison of each subtype.

The first set of data analyzed was collected using the SEI. The SEI was used to collect data related to the affective/psychological and cognitive engagement of the students. The results of the SEI were collected and the scores for each student were calculated. The mean was determined for each student using the data from each of the sub-types of student engagement measured by the SEI. The results of this analysis were displayed in Figure 3. Figure 3 is a display of the results of the SEI as related to overall student engagement. For the purpose of the SEI, overall student engagement was cognitive and affective engagement data.

Affective and cognitive data was analyzed based on the overall measurement of cognitive and affective data together. Overall SEI data, for the purpose of analysis, was collected and summed. The mean of the summed data was found and the results were presented in Figure 3. The overall score was inversely related to perceived student engagement. This meant that the lower the overall score on the cognitive and affective assessments of engagement using the SEI, the more engaged the student perceived participation in the course.
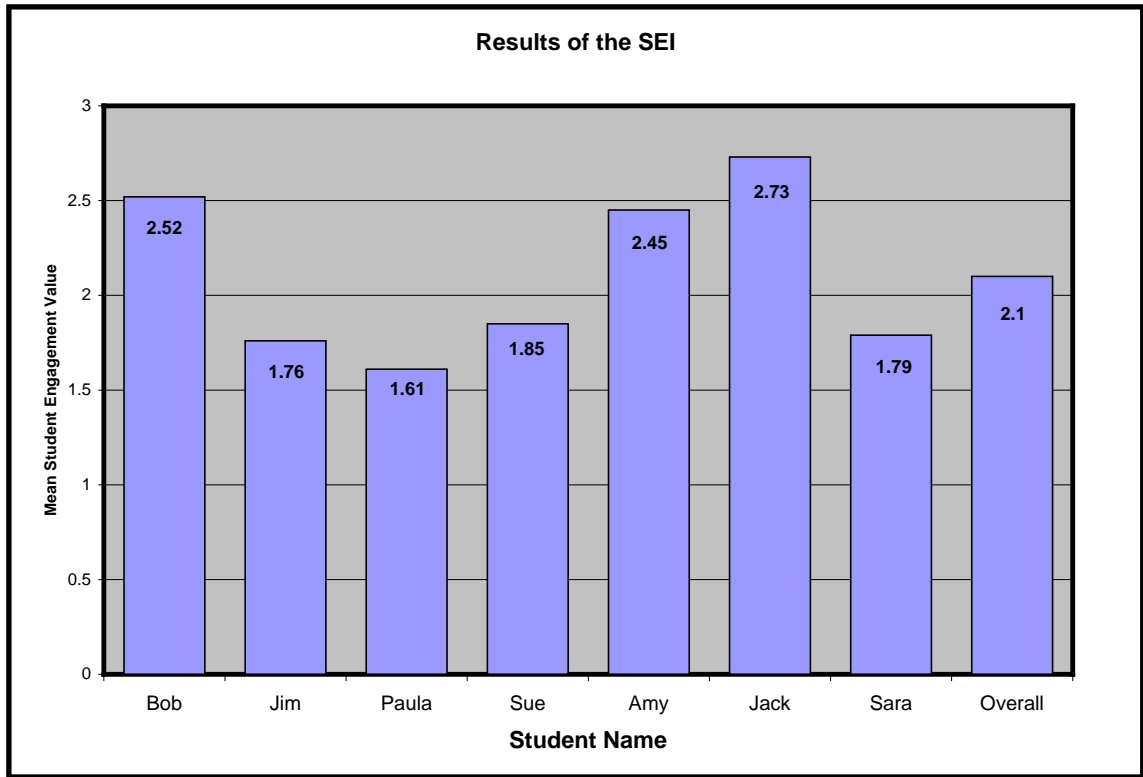
Results of the SEI

Figure 3. Results of the SEI by Student. Overall Mean Scores from the SEI
The greater the number value scored, the lower the level of student engagement
measured.

In addition to the determination of the overall levels of affective and cognitive
engagement, the results of the SEI were also disaggregated by indicators for each student.
Figure 4 is a representation of this data. Each horizontal row represents overall student
engagement. The relative scores for each of the student engagement scales were
displayed as sections along the overall score on the SEI in order to provide a view of the
relative value of each scale score.

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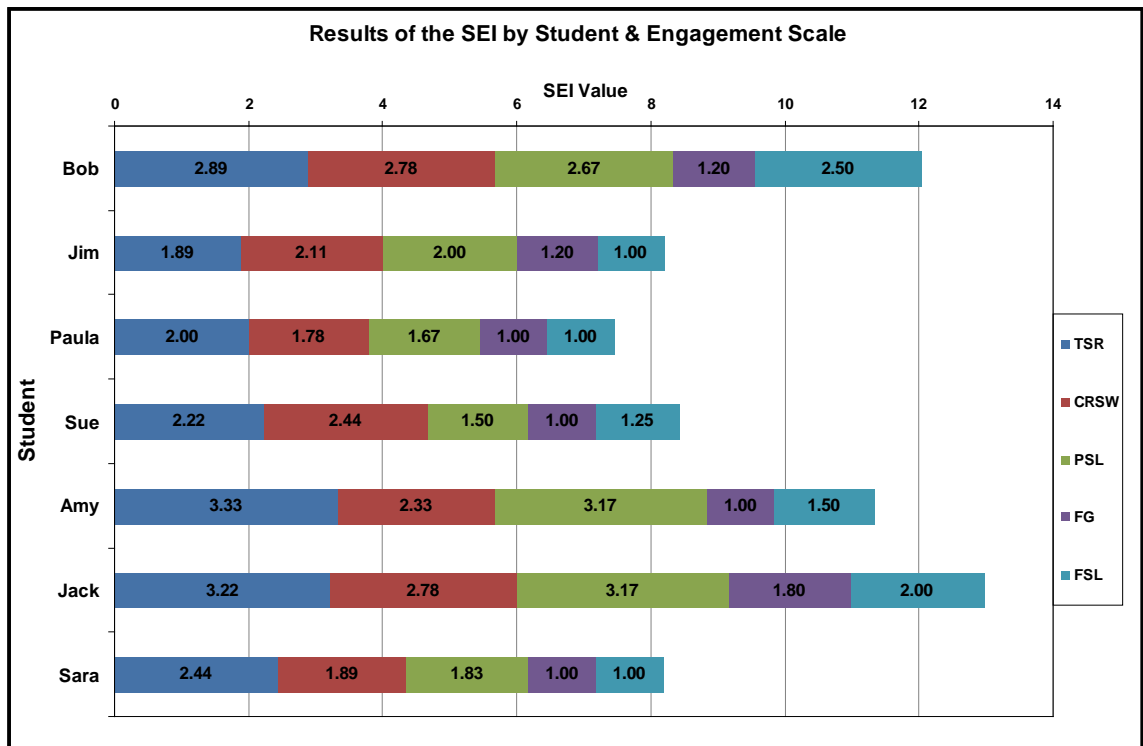
Figure 4. Results of the SEI by Engagement Sub-type.

The greater the number value scored, the lower the level of student engagement

measured. **TSR** = Teacher Student Relationship; **PSL** = Peer Support for Learning;

FSL = Family Support for Learning; **CRSW** = Control and Relevance of School Work;

FG = Future Goals.

Psychological/Affective Engagement

The next data examined were the results of the SEI related to the measurement of

affective/psychological engagement. Affective/psychological engagement was measured

by the SEI using the scale scores Teacher-Student Relationships (TSR), Peer Support for

Learning (PSL) and Family Support for Learning (FSL). Indicators of affective

engagement included feelings of identification or belonging and relationships with teachers and peers (Appleton et al., 2006).

The affective engagement data collected through the use of the SEI was examined. It was then separated according to the scales used for measurement on the SEI. The arithmetic means were calculated for each student and were used to determine averages for each student's scale score. The data resulting from this analysis were displayed in Figure 5. Figure 5 displays the overall overage for the affective sub type as well as the means for each of the scales used in the measurement of the affective sub-type. The results for the SEI subscale for psychological engagement was 2.11. The result on the scale for TSR was an average score of 2.57. On the PSL scale the average was 2.29. On the FSL scale the average was 1.46. These results provided a means to measure the relative levels of affective/psychological engagement amongst the study participants. The mean scores showed that FSL was the highest indicator of affective/psychological engagement among the study population. TSR was the lowest over measured indicator of affective/psychological engagement among the same population.
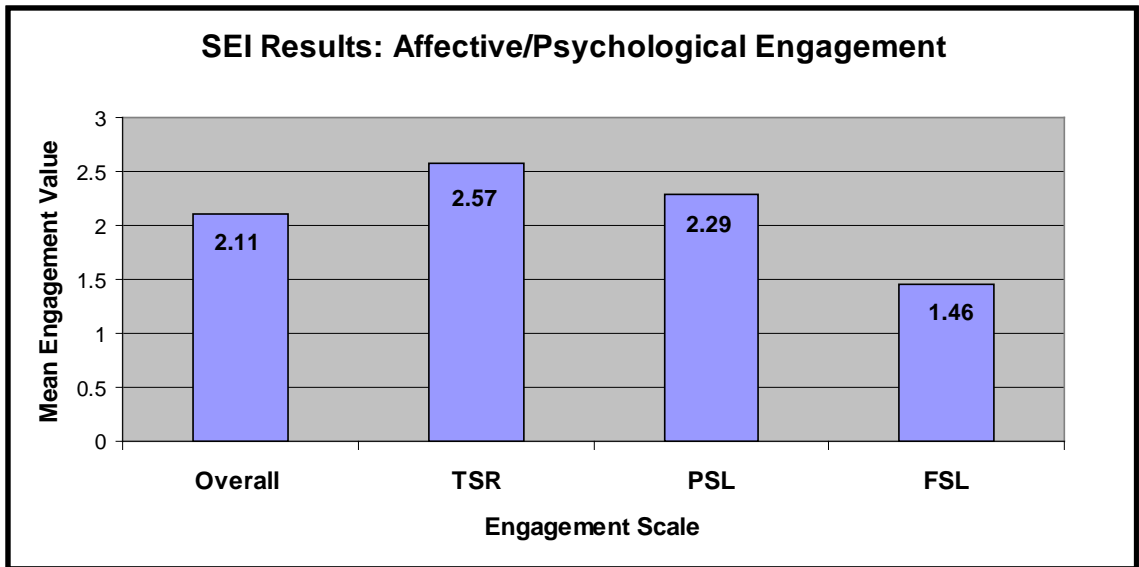
Figure 5. SEI Results of Affective/Psychological Engagement by Sub-type Mean and Individual Engagement Scale Scores.

The greater the number value scored, the lower the level of student engagement measured. **TSR** = Teacher Student Relationship; **PSL** = Peer Support for Learning; **FSL** = Family Support for Learning.

Based on the data collected using the affective scales of student engagement, several interesting findings were revealed. The maximum measure of PSL data collected during this research was by Amy. Amy had a score of 3.2 on PSL. This score, based on the relationship between engagement and scale score, demonstrated that Amy perceived herself to be engaged at the lowest levels of any other student in the class. Sue had the lowest score on the PSL with a 1.5. This score, based on the relationship between engagement and scale score, demonstrated that Sue perceived herself to be engaged at the highest level of any other student in the class. Recall, the higher the score on the SEI, the

lower the level of student engagement for that indicator. When the highest and the lowest measures of PSL were compared, the data showed a range of 1.7. This variation in data was interesting because, for the most part, the students in this study were around similar peer groups in school. I would have expected this data to be relatively similar from student to student because they were drawn from a similar peer group.

The wide range in scores recorded from PSL scale was supported by the student responses to the student engagement interview. Each of the students interviewed identified some aspect of the classroom that was affected by a classmate who is off task. The responses to the question, "How does it affect you if a classmate is not participating in class?" run the gamut of possibilities. One of the students responded with a flippant, "It doesn't really affect me." The lackadaisical attitude was interpreted as a representation of the lower end of the PSL range. This response was given by Jack. Jack received a score of 3.17 on PSL. Jack's score was nearly the lowest measure of engagement based on the PSL scale. At the other end of the spectrum was a compassionate response to the same question. When asked the same question as Jack, Sue responded, "It makes me wonder if they need help to understand what the work is." The compassion expressed in the response was certainly an indication of how significant Sue felt about the positive effect of PSL. This was supported by Sue's score on the scale measuring PSL. Sue had a score of 1.5. Sue's score was the highest level of PSL recorded by any participant.

Another significant result was gathered based on the indicator FSL. Traditionally, the site school has been recognized for having lower than average amounts of parent

involvement. This was contrary to what was discovered in this research. The FSL was

the highest measure of any indicator of affective student engagement. The data showed

that among the seven students in this study, only two of them had scores above a 2 on the

scale measuring FSL. FSL was also the highest measured scale overall with an average

of 1.76 when all of the student data is included.

Minority student perceptions of the learning environment supported the results of

this research. Based on prior research, the teacher student relationship is generally

perceived to be weak by both minority students in education and minority students in

gifted education. The importance of the teacher student relationship was supported in this

research. Research has shown that teacher support for learning is generally perceived

negatively by students in underrepresented populations of the gifted (Van Tassel-Baska,

2010).   This was supported by the data collected from the SEI demonstrating the lack of

teacher support and may have caused the responses focusing on the importance of the

teacher student relationship. The strength of the relationship between teacher and student

was laid out by Skinner and Belmont (1993), Kaplan (2011), and Marks (2000).

The results for PSL had a surprising range based on the fact that these students

spend most of the day together. Table 2 displays the data collected from the SEI related

to the affective/psychological engagement sub-type as measured for each student.

The results on the scales of affective engagement were ultimately mixed.

Table 2: *The Affective Engagement Sub-type and the TSR, PSL, and FSL Scales Used for*

Measurement

Student	Affective Engagement	TSR	PSL	FSL
Bob	2.69	2.89	2.67	2.50
Jim	1.63	1.89	2.00	1
Paula	1.56	2.00	1.67	1.00
Sue	1.65	2.2	1.50	1.25
Amy	2.67	3.3	3.2	1.50
Jack	2.79	3.2	3.17	2.00
Sara	1.74	2.4	1.83	1.00

Note: Higher Scores = Lower Levels of Student Engagement

TSR = Teacher-Student Relationship

PSL= Peer Support for Learning

FSL = Family Support for Learning

Academic Engagement

Appleton et al. (2006) showed that high levels of affective engagement were indicators of high levels of academic engagement. The results of the study showed that the participants of this study had relatively high rates of academic student engagement. The SEDOC revealed high levels of academic achievement. The data were supported by the Student Engagement Interview. The SEDOC was a tool used for the systematic

observation of indicators of behavioral and academic engagement. Unlike the cognitive and affective sub-types, academic and behavioral engagement were readily measured by direct observation and attendance reports. The SEDOC was used each day in the classroom in order to collect data related to academic engagement. Time on task is considered a traditional indicator of academic engagement. Every ten minutes during each class period the students participating in this research were observed and tallies were made as appropriate in the on task section.

Based on the results of the SEDOC, every student was on task every time they were observed. I believed that the students figured out that I was watching them and began to be sure that they were on task at the appropriate time. Also, these students displayed a high level of FSL on the SEI. Strong FSL could be carried into the classroom and manifest itself as increased levels of academic engagement. Other measures of academic engagement include being on grade level and completing assignments. All of the students in this study were in the appropriate grade. All of the students in this study completed assignments during the data collection period.

The Student Engagement Interview was used to expose students' perceptions of engagement. The following responses from the Student Engagement Interview showed the connection between academic engagement and student expectations of engagement. Academic engagement is related to the meeting of mandatory minimum requirements in school. The completion of assignments was one of the primary indicators of academic engagement. When students were asked, "How does a teacher know when a student is participating in class?" the responses showed a level of sophistication. The students

inherently knew that academic engagement was measured by direct observation. Their responses were each related to behaviors in the classroom needed to be in compliance with school-wide expectations. The sample responses listed all focus on doing work.

- Amy, "It looks like they are doing work."

- Bob, "The teacher can hear the students talking about the subject."

- Sara, "When the teacher can see the student doing their work."

- Sue, "They are quiet and focused on completing their work correctly and neatly."

In addition to the SEDOC, the Student Engagement Interview was used to corroborate the data. The primary support provided by the responses to the interview questions was that students consider themselves engaged if they are meeting the indicator requirements of academic engagement such as being on task, on grade level, and turning in assignments.

Cognitive Engagement

The third engagement data to be examined were the results of the SEI related to the measurement of cognitive engagement. Cognitive engagement is measured by the SEI using the scales of Future Goals (FG) and Control and Relevance of Coursework (CRSW). Indicators of cognitive engagement include: Self-regulation, relevance of schoolwork to future, endeavors, value of learning, and personal goals and autonomy (Appleton & Christenson, 2006).

The data collected through the use of the SEI were categorized into the cognitive engagement sub-type. The data were further analyzed according to the scales used for measurement on the SEI. The means were calculated for each student and were used to

determine averages for each scale that included the results from each of the seven

students. The data resulting from this analysis are displayed in Figure 6. Figure 6

displays the overall average for the cognitive sub-type as well as the means for each of

the scales used in the measurement of the cognitive sub-type. The results on the SEI

subscale for cognitive engagement was 1.74. On the scale for CRSW the average of the

seven participants was 2.30. The average score on the scale for FG was 1.17. The results

for cognitive engagement demonstrated that, for these students, the cognitive engagement

subtype was more positive than their affective engagement.
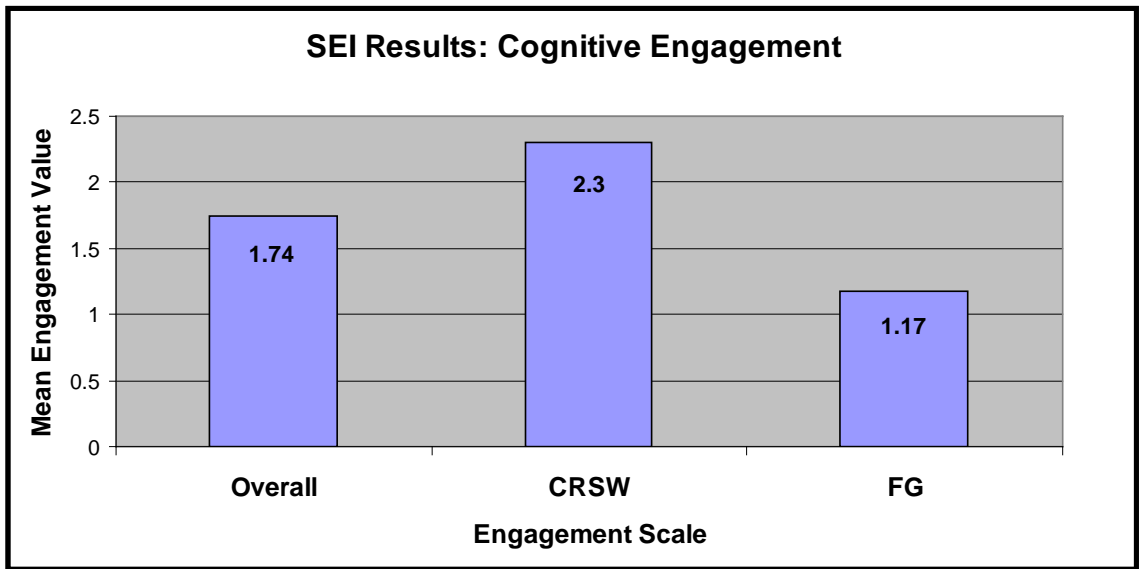
Figure 6. SEI Results of Cognitive Engagement by Sub-type Mean and Individual

Engagement Scale Scores.

The greater the number value scored, the lower the level of student engagement

measured. **CRSW** = control and relevance of coursework; **FG** = future goals.

The highest score measured on any scale of the SEI was the scale based on a students' FG. Based on the results of the SEI there was no score above 1.8 on the FG scale. The maximum score on the FG scale was a 1.8 and the minimum score was a 1. The range for the FG scale scores was 0.8. The responses from the student engagement interview were analyzed for insight into student perceptions regarding future goals. Student ideas did not explicitly contain mentions of future goals, but in the responses to one of the interview questions the high expectation for the future could be deduced. The question focused on the student's own awareness of effort. "How do you know when you are concentrating on an activity?" The responses seemed to equate concentration with doing the personal best. Paula responded, "I know I am concentrating when I ask questions to learn more about the subject. I do not even hear the other stuff going on in class." This response showed that Paula understood that rewards would come from effort in the classroom. Of the seven responses, four were related to shutting out distractions in the class. Three responses were focused on doing the best work possible. Three responses included a mention of asking the teacher questions about the subject.

There is a wide discrepancy between the scores from the two scales of cognitive engagement. The CRSW measurement was generally stable across the student sample. The maximum scores for the CRSW scale were obtained by Bob and Jack. Both demonstrated a relatively low indication of cognitive engagement based on the CRSW with scores of 2.78. The minimum measured score of CRSW was by Paula. Paula scored 1.78 on the CRSW scale. This data together represent the maximum and

minimum score and were used to determine that the range for the CRSW scale scores is one. Recall the range for PSL was 1.7.

The results on the scales of cognitive engagement were widely mixed. FG was the single highest score of any of the scales of the SEI.   On the other hand, CRSW was near the bottom of the scores for any of the scales measured by the SEI. The low measure of CRSW led me to question how I chose work for the class. Was the work assigned in class relevant? Table 3 displays the measures of the cognitive engagement subtype as measured by the SEI scales for each student.

Table 3: *Cognitive Engagement Sub-type and the CRSW and FG Scales Used for*

Measurement

Student	Cognitive Engagement	CRSW	FG
Bob	1.99	2.78	1.20
Jim	1.66	2.11	1.20
Paula	1.39	1.78	1.00
Sue	1.70	2.40	1.00
Amy	1.65	2.30	1.00
Jack	2.29	2.78	1.80
Sara	1.45	1.89	1.00

Note: Higher Scores = Lower Levels of Student Engagement

CRSW = Control and Relevance of Coursework

FG = Future Goals

Behavioral Engagement

The results of this study showed that the participants of this study displayed

relatively high rates of behavioral student engagement. The SEDOC revealed high levels

of behavioral engagement. There were no student absences. Each day every student

asked at least one voluntary question about the topic being discussed in class. I believe

that a possible reason for the relatively high level of behavioral engagement is similar to

the possible reasons for the results of the SEDOC when used to measure Academic

engagement. Again, these students displayed a high level of FSL on the SEI. Strong FSL could be carried into the classroom and manifest itself as increased levels of behavioral engagement.

In addition to the SEDOC, the Student Engagement Interview was used to corroborate the data. The primary support provided by the responses to the interview questions was that students consider themselves engaged if they are meeting the indicator requirement of behavioral engagement such as asking questions and being purposefully involved in the class work.

- Paula, "When a teacher asks a question and students answer the question."
- Sue, "The students would communicate and get involved in their subject and talks to the teacher about the subject."
- Jim, "I ask questions to learn more about the subject. I do not hear the other stuff going on in class."
- Bob, "I am asking the teacher questions about the subject."

Affective engagement was thought to be the heart of student engagement. All of the other sub-types logically were positively related with the level of affective engagement. The thinking followed the logic that if a student felt as if they were part of the school and the relationships with peers, teachers, and parents was positive, then they would be more likely to have developed positive expectations of their academic future and goals (cognitive engagement). If the student had a positive outlook for his or her academic future, then they would have been more likely to comply with minimum

expectations (academic engagement) and made personal efforts to participate in school-life (behavioral engagement).

Summary

The SEI provided a measurement of affective and cognitive engagement. The results of the SEDOC provided information key to measuring behavioral and academic engagement. The results of the student engagement interview revealed student ideas about engagement in the classroom. Overall, the results were in line with what I expected to see. The question that elicited the most surprising responses was the final question concerning teacher encouragement for engagement. These responses collectively pointed to a strong need for better teacher relationships with the student. The importance of the relationship is demonstrated in the response, "The teacher can come to class with a positive attitude and that will make the students have a positive attitude too." The student spoke directly to the importance of not only teacher preparation but the impact a teacher's attitude can have on the willingness to work.

The following chapter explored the connection between engagement and achievement as it relates to the improvement of the gifted education program. In addition the results were discussed in relationship to earlier research findings and recommendations for the future study of student engagement were proposed.

CHAPTER FIVE: CONCLUSIONS

Introduction

The purpose of this research was to measure student engagement among gifted learners enrolled in a project-based course focused on research and critical thinking. The participants in this study were students in grades 6-8 at an urban middle school in Central Florida. The definition of student engagement used in this research was first proposed by Appleton et al. (2006). Appleton et al. described student engagement as a composite of four engagement sub-types. The sub-types that comprised student engagement were cognitive, affective/psychological, academic, and behavioral engagement.

Student engagement has been measured at the post secondary level using common assessment instruments for approximately ten years. The common assessment of student engagement has not yet been formally adopted by the K-12 community. There is no common assessment used neither at the site school nor in the site school's district. This study was carried out in order to address that void in the K-12 public education. The results of this study were used to answer the following research questions:

Overall student engagement measured by the student engagement instrument was mixed. Students possessed a positive outlook on the future based on the relative score on the future and goals engagement scale. One of the lowest reported areas of student engagement was the teacher student relationship. Specifically, the student did not feel as though engagement was properly supported by the teacher.

The overarching theme in student perceptions of engagement is the importance of the teacher. Responses form the student engagement interview revealed the importance

of the teacher's role as motivator. Students seem to perceive engagement based on the academic sub-type. This was especially evident when asked the method a teacher uses to assess student engagement. When asked how a teacher knows a student is engaged in class the student responses were focused on doing completion of assignments and coming to school. Each of these indicators are defining characteristics of the academic sub-type of engagement.

Discussion

The relationship between student engagement and student achievement has been studied since at least the mid-1970s. Student engagement has been shown to be positively related to student achievement (Singh et al., 2002; Van de Gaer et al., 2009). Using the knowledge that student engagement is positively related to student achievement, a teacher could focus on increasing student engagement and expect a positive impact on student achievement. If the development of student engagement were used as a tool in the gifted classroom, there may be an increase in gifted student achievement. This logic was used in the development of this study.

Spanjers et al. (2008) determined that systematic direct observation is an effective method of determining student engagement. The researchers recognized that time on task was not an end all but it did provide a reasonable measure of overall student engagement. This research supported their findings. Based on the results of this research time on task is a component of student engagement.

Skinner and Belmont (2003) identified three components of student engagement. They left out the importance of relationships between teacher and student. Skinner and

Belmont did acknowledge the importance of the teacher student relationship in their research but they did not include it as part of the instrument they developed to measure student engagement. The instrument developed by Skinner and Belmont did measure a piece of student engagement but it did not measure student engagement in its entirety. This research provided support for the effect of student relationships on student engagement. Positive student relationships with peers, teachers, and family each contribute to positive student engagement. A more complete view of student engagement must include a consideration of each student's personal relationships.

Academic and behavioral engagement can be used as identifiers for students requiring a greater amount of social and emotional supports. Academic and behavioral engagement are intrinsically tied to the affective engagement of a student. Research has demonstrated a connection between levels of FSL (an affective engagement indicator) and academic and behavioral engagement (Appleton et al., 2006). The relationship was supported by the results of this research. When the measurements of affective/psychological engagement were analyzed, FSL was one of the highest measured of the engagement indicators. Appleton et al (2006) suggested that higher levels of FSL would result in higher levels of behavioral and academic engagement. The measured levels of behavioral and academic engagement indicators as measured by the SEDOC in this research were 100%. This measurement suggested that FSL could have played a role in the level of academic and behavioral engagement.

<center>Implications</center>

I believe in the "teacher-centered classroom." The backbone of this concept is that a teacher will never be able to truly meet the needs of any student unless the teacher's needs are fully met. The discovery that the lowest measure of student engagement was in the area of TSR made me pause and take inventory on the effectiveness of my relationship building in the classroom. I need to increase my level of teacher encouragement based on the ideas provided by the students. I need to provide more positive reinforcement and develop a better understanding of the affect my attitude can have on the students I am teaching.

This research demonstrated relevant coursework was one on the areas of greatest opportunity for improvement. Brophy (1982) demonstrated that the more relevant the coursework, the more likely the student was to be on task. The relationship between time on task and student achievement was supported by research. The significance of the relationship cannot be understated. The measure of student perception of control and relevance of school work (CRSW) was one of the lowest scored scales of engagement.

In relation to parents, this research led to a better understanding of the impact positive family supports can have on student engagement. The high level of family support for learning supported by this study should not be overlooked. Research has demonstrated that student achievement begins with family support (Van Tassel-Baska, J., & Olszewski-Kubilius, P. 1994). Each of the family members who placed a high value on education should all be commended.

<center>60</center>

In addition to the significance of family and peer relationships supported by this research, this study imparted a deeper understanding of the relative importance of the teacher student relationship in education. Administrators should take note of the significance of the teacher student relationship. It also supported the need for administration to provide time for teachers and students to develop positive, meaningful relationships at school.

<u>Limitations</u>

The primary limitation of this study was time. Administrative constraints did not allow for a thorough collection of observational data. More accurate observational data could have been collected over a longer period of time. The (SEI) was a self-report questionnaire. Self-report results have been shown to exhibit bias.

The results of this study can be used to further develop the site school's gifted program. The findings may not be appropriate or effective when used in other populations. The school studied in this action research had a relatively small gifted population. The small gifted population we drew from had a higher than expected rate of underrepresented populations. These variations prevent the results of this research to be used in other classrooms. The limitations decrease the application of the findings of this research as this research was not meant to be generalized. The application of the results of this study was not generalizable.

Recommendations

     In the future, I would run the measurement of student engagement using a sample that better represented a cross-section of the district population. Although I was able to compare the sub-types of student engagement among the gifted students, I was not able to compare the overall levels of student engagement of the gifted with those of students not receiving gifted services. If I were to replicate this study I would measure the affective support provided to the students through personal relationships. The research conducted by this facility focused on the student alone.

     Through the use of multiple measures of engagement it would be possible to include the teacher, family, and peer -perceptions of support as related to the components of student engagement. The data collected from such a study would assist teachers in the development of a more accurate picture of student engagement. The standard measurement of student engagement could also be used to examine the effectiveness of teacher observation. I still am left with the belief that I can prepare myself to become a more accurate practitioner of teacher observation. This is a skill each teacher should be encouraged to develop.

APPENDIX A: UNIVERSITY IRB APPROVAL

NOT HUMAN RESEARCH DETERMINATION

From   :   **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To   :   **Samuel Crupi Jr.**

Date   :   **April 15, 2011**

Dear Researcher:

On 04/15/2011 the IRB determined that the following proposed activity is not human research as defined by
DHHS regulations at 45 CFR 46 or FDA regulations at 21 CFR 50/56:

Type of Review:	IRB Initial Review Submission Form
Project Title:	An Analysis of Gifted Student Engagement in a Middle School Research and Critical Thinking Course
Investigator:	Samuel Crupi Jr.
IRB ID:	SBE-11-07612

University of Central Florida IRB review and approval is not required. This determination applies only to
the activities described in the IRB submission and does not apply should any changes be made. If changes are to
be made and there are questions about whether these activities are research involving human subjects, please
contact the IRB office to discuss the proposed changes.
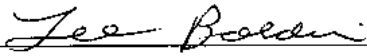
On behalf of Kendra Dimond Campbell, MA, JD, UCF IRB Interim Chair, this letter is signed by:

Signature applied by Janice Turchin on 04/15/2011 12:26:57 PM EDT

IRB Coordinator

APPENDIX B: DISTRICT IRB APPROVAL

Requester's Name__Samuel Crupi, Jr.__   Date__January 4, 2010__

E-mail__samuel.crupi@ocps.net__   Phone__(407)733-9581__

Address__10714 Westbrook Drive   Orlando, FL   32821__
    Street   City, State   Zip

Institutional Affiliation__University of Central Florida__

Project Director or Advisor__Bobby Jeanpierre, Ph.D.__   Phone__407-823-4930__

Degree Sought: (check one) ☐ Associate ☐ Bachelor's ☒ Master's ☐ Specialist
                       ☐ Doctorate ☐ Not Applicable

Project Title:__An Analysis of Gifted Student Engagment in a Middle School Research and Critical Thinking Course__

ESTIMATED INVOLVEMENT

PERSONNEL/CENTERS	NUMBER	AMOUNT OF TIME (DAYS, HOURS, ETC.)	SPECIFY SCHOOLS BY NAME AND NUMBER OF TEACHERS, ADMINISTRATORS, ETC.
Students	6	10 Hours	
Teachers	1	3 Weeks	**School Name Removed**
Administrators	3	1 Hour	
Schools/Centers	1	20 Hours	
Others (specify)			

Specify possible benefits to students/school system:__Possible benefits will include a more engaging gifted curriculum for students and a better understanding of the gifted learning environment for educators.__

ASSURANCE

Using the proposed procedures and instrument, I hereby agree to conduct research in accordance with the policies of the Orange County Public Schools. Deviations from the approved procedures shall be cleared through the Senior Director of Accountability, Research, and Assessment. Reports and materials shall be supplied as specified.

Requester's Signature_____

Approval Granted: ☒ Yes ☐ No   Date:_1-28-11_

Signature of the Senior Director for Accountability, Research, and Assessment_____

APPENDIX C: THE STUDENT ENGAGEMENT INTERVIEW

Student Engagement Interview Questions

1. What does it look like for a student to be on task?

2. How do you know if you are concentrating on an activity?

3. When other students are not participation in class haw does this affect you?

4. When other students are not on task how does this affect you?

5. How does a teacher know when a student is participating in class?

6. Do you think it is necessary for a student to participate in class in order to learn what is being taught that day?

7. How can teachers better encourage students to participate in class?

APPENDIX D: THE STUDENT ENGAGEMENT DIRECT OBSERVATION CHECKLIST (SEDOC)

Student Engagement Direct Observation Checklist

Participant: _____   Start Day: _____ End Day: _____

Section One
Daily Observations

Attendance					
Ask a Question					
Use a Pass					

Section Two
Time-Interval Observation Tally

On Task				
Off Task (Disruptive)				
Off Task (Non-Disruptive)				
Out of Class				

APPENDIX E: SEDOC TERMS AND DEFINITIONS

Category Definitions and Instructions for the

Student Engagement Direct Observation Checklist (SEDOC)

Ask a Question: This tally is marked if the student poses a content related question to the teacher at any time during the class period. Questions posed to the teacher outside of the class time assigned on the student schedule do not count towards this measure.

Attendance: Attendance for the purpose of the SEDOC is either present or absent. Attendance is taken approximately 15 minutes after the final bell announcing the administrative beginning of class time. If the student is in the classroom during attendance the attendance box will be filled in with a P. If the student is not present a record of A will be placed in the appropriate section of the SEDOC. If, at any time during the study I am notified by any faculty or staff member that the student was with them for the class time missed the student will be recorded in the Out of class section only..

Off Task (Disruptive): The student is not actively involved in the daily assignment as dictated by teacher instructions and is causing a disturbance.

Off Task (Non-Disruptive): The student is not actively involved in the daily assignment as dictated by teacher instructions but is not causing a disturbance.

On Task: The student is actively involved in the daily assignment. Actively is defined as purposeful use of the written or spoken work as long as it is related to the course content focus for that class period.

Out of Class: The student will be marked out of class if they are not present when attendance is taken but there is a valid reason for being out of the classroom. Valid reasons include working in another classroom or using the restroom.

Use a Pass: This item will be checked if the student asks to use a pass to exit the classroom. Requests upon the student from outside the classroom such as being called to the front office are not tallied as a use of pass.

APPENDIX F: STUDENT ENGAGEMENT INSTRUMENT

STUDENT ENGAGEMENT INSTRUMENT

Directions: Respond to the following items by circling what you feel is the most

appropriate answer.

1 = Strongly Agree   2 = Agree   3 = Disagree   4 = Strongly Disagree

1. Overall, adults at my school treat students fairly.

    a. 1   2   3   4

2. Adults at my school listen to the students.

    a. 1   2   3   4

3. At my school, teachers care about students.

    a. 1   2   3   4

4. My teachers are there for me when I need them.

    a. 1   2   3   4

5. The school rules are fair.

    a. 1   2   3   4

6. Overall, my teachers are open and honest with me.

    a. 1   2   3   4

Directions: Respond to the following items by circling what you feel is the most appropriate answer.

1 = Strongly Agree   2 = Agree   3 = Disagree   4 = Strongly Disagree

7. I enjoy talking to the teachers here.

    a. 1   2   3   4

8. I feel safe at school.

    a. 1   2   3   4

9. Most teachers at my school are interested in me as a person, not just as a student.

    a. 1   2   3   4

10. The tests in my classes do a good job of measuring what I'm able to do.

    a. 1   2   3   4

11. Most of what is important to know you learn in school.

    a. 1   2   3   4

12. The grades in my classes do a good job of measuring what I'm able to do.

    a. 1   2   3   4

Directions: Respond to the following items by circling what you feel is the most appropriate answer.

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

13. What I'm learning in my classes will be important in my future.

    a. 1   2   3 4

14. After finishing my schoolwork I check it over to see if it's correct.

    a. 1   2   3 4

15. When I do schoolwork I check to see whether I understand what I'm doing.

    a. 1   2   3 4

16. Learning is fun because I get better at something.

    a. 1   2   3 4

17. When I do well in school it's because I work hard.

    a. 1   2   3 4

18. I feel like I have a say about what happens to me at school.

    a. 1   2   3 4

19. Other students at school care about me.

    a. 1   2   3 4

Directions: Respond to the following items by circling what you feel is the most

appropriate answer.

1 = Strongly Agree   2 = Agree   3 = Disagree   4 = Strongly Disagree

20. Students at my school are there for me when I need them.

    a. 1   2   3   4

21. Other students here like me the way I am.

    a. 1   2   3   4

22. I enjoy talking to students here.

    a. 1   2   3   4

23. Students here respect what I have to say.

    a. 1   2   3   4

24. I have some friends at school.

    a. 1   2   3   4

25. I plan to continue my education after high school.

    a. 1   2   3   4

26. Going to school after high school is important.

    a. 1   2   3   4

Directions: Respond to the following items by circling what you feel is the most appropriate answer.

1 = Strongly Agree   2 = Agree   3 = Disagree   4 = Strongly Disagree

27. School is important for achieving my future goals.

  a. 1 2 3 4

28. My education will create many future opportunities for me.

  a. 1 2 3 4

29. I am hopeful about my future.

  a. 1 2 3 4

30. My family/guardian(s) are there for me when I need them.

  a. 1 2 3 4

31. When I have problems at school my family/guardian(s) are willing to help me.

  a. 1 2 3 4

32. When something good happens at school, my family/guardian(s) want to know about it.

  a. 1 2 3 4

33. My family/guardian(s) want me to keep trying when things are tough at school.

  a. 1 2 3 4

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