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The Relationship Between The Behaviors Of Students With An Emotional Impairment And The Beginning Of Academic Decline Or Success

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THE RELATIONSHIP BETWEEN THE BEHAVIORS OF STUDENTS WITH AN EMOTIONAL IMPAIRMENT AND THE BEGINNING OF ACADEMIC DECLINE OR SUCCESS

by

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DEDICATION

To:

Andrew Walker

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This dissertation

is

gratefully dedicated

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CHAPTER ONE

INTRODUCTION

Background

In the mid-twentieth century parents of children with disabilities began a crusade for fair and equal treatment for their children. They set up advocacy networks, starting with the Association of Retarded Children (ARC), to provide political pressure to pass legislation ensuring equal treatment for their children (U.S. Department of Education, 2007). Numerous laws, such as the Training of Professional Personnel Act, the Elementary and Secondary Education Act, and the State Schools Act, laid the foundation for legislation that directly provided protection for students with disabilities (U.S. Department of Education, 2007). Court decisions gave further significance to these laws by reinforcing the right to an education for students with disabilities. In 1975 the federal government passed the landmark special education law, The Education for All Handicapped Children's Act. This law ensured rights for these students and provided districts with six guiding principles on which to base the education of students with disabilities. These principles include: free and appropriate public education, nondiscriminatory identification and evaluation, individualized education plan, least restrictive environment, due process, and parent participation. A free and appropriate public education (FAPE) means students with disabilities could not be prevented from attending a public school due to having a disability. Nondiscriminatory identification and evaluation practices safeguard culturally and linguistically diverse students from placement in special education through the use of more than one evaluation tool, evaluations in the student's native language, and evaluations by qualified personnel. An individualized education plan (IEP) details the student's present level of academic achievement and functioning, outlines accommodations and supports necessary for the

student to gain educational benefit, and provides goals to evaluate the student's progress. The least restrictive environment (LRE) ensures that students with disabilities will have access to general education classes and nondisabled peers to the greatest extent possible. Due process provides safeguards and procedures to protect students with disabilities, including parental consent for initial evaluation and a mediation process. Last, parental involvement focuses on having parents involved in the student's education. This involvement includes input on evaluation, placement, and IEP development. To ensure these rights were maintained, in 1990 President Bush signed the Individuals with Disabilities Education Act, the reauthorization of the Education for All Handicapped Children's Act. This reauthorization continues to provide special education services for thirteen disability categories, including students with emotional impairments.

Emotional impairment. A category that makes a student eligible for special education services includes emotional impairment. IDEA defined an emotional impairment (EI) as a disability that adversely affects education to a marked degree over a long period of time due to emotional or behavioral issues. The qualifying criteria include an inability to learn not explained by medical, sensory, or health problems, an inability to build and/or maintain relationships, inappropriate responses under normal circumstances, a pervasive mood of unhappiness or depression, and physical symptoms or fears associated with school (The Education for All Handicapped Children's Act, 1975).

The hallmark characteristic of students with EI includes intrinsic emotional issues, such as depression or anxiety, and/or extrinsic behavioral problems, which may include aggression, noncompliance, physical destruction, or verbal/physical outbursts. These behaviors occur frequently and with such intensity that it interferes with the student's ability to learn. To combat

these problems, the social worker and special education teacher conduct and implement a behavior intervention plan (BIP).

The BIP aims to reduce the behaviors so that the student can concentrate on his or her schoolwork and learn. Its goal is to reduce problem behaviors in school. It has multiple components that take into account all aspects that could cause or contribute to the problem behaviors. It provides explicit instructions and steps to reduce the inappropriate behaviors and increase appropriate behaviors. Each plan uses the function of the behavior to replace the problem behavior with an acceptable alternative. Once the problem behaviors decrease the student can focus on appropriate behaviors and academics. A paucity of research exists on whether implementation of a BIP does produce an increase in academics. The studies that do exist measure this through academic engagement or on-task rates. This study will use multiple sources of data, including grades, standardized tests, and achievement testing, to determine if there is an improvement in academics after the implementation of a BIP. An objective view of the student's progress rather than a researcher's subjective view as to whether or not the student is engaged or on task during the lesson will be provided by this study.

Behaviors that interfere with academic achievement has been the focus of educators, scholars, and researchers. Despite this sole focus on behavior, many researchers (e.g. Greenbaum et al., 1996; Lambros et al., 1998; Trout, Nordness, Pierce, & Epstein, 2003; Bradley, Henderson, & Monfore, 2004; Cullinan & Sabornic, 2004; Nelson, Benner, Lane, & Smith, 2004; Reid et al., 2004; Lane et al., 2006; Wagner et al., 2006; Bradley, Doolittle, & Bartolotta, 2008) report the dismal state of academics for students with emotional impairments (EI). The research states the importance of the bidirectional relationship between behaviors and academics, but the study between the two ends there (see Figure 1). Few research studies exist that explore

academic interventions for students with EI; most intervention studies deal with outside therapy for coping

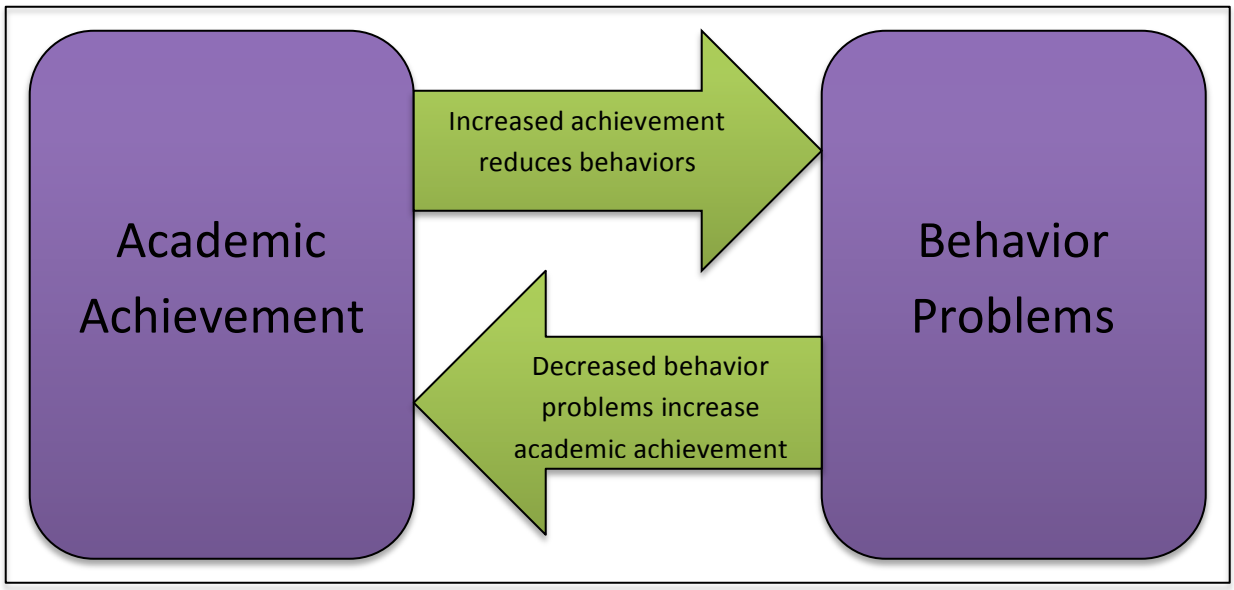


Figure 1: Current Theory on Bidirectional Relationship for Students with EI

skills, anger management, and depression. In order to determine what academic interventions prove effective for students with EI, an estimated grade level where interventions should occur needs to be determined. A cross sectional design will be used in this study to determine if statistically significant differences in grades, standardized tests, and achievement testing exist, guiding school administrators and teachers to the appropriate time frame for academic interventions for students with EI.

Statement of the problem. The current problem is that researchers and educators do not know when the behaviors of students with EI start to interfere with their ability to learn academic content and skills. Furthermore, they do not have any evidence that shows whether or not

academic performance increases after reducing interfering behaviors through the implementation of a behavior intervention plan (BIP).

Purpose of the study. The purpose of this study is to determine at which grade level cluster do the behaviors interfere enough to prevent students with EI from making academic gains. Identifying this correlation between grade level clusters and academic decline will help schools and educators decide when they should provide intense academic interventions for students with EI.

Researchers have studied the status of students with emotional impairments (EI) in terms of the effect of behaviors on academic engagement or task completion; however, multiple sources of data will be used to determine the status of students with EI at certain points. Using multiple pieces of data will provide a more detailed view of students with EI. While current research provides a complete picture of the status of students with EI, few research studies disaggregate their data into grade level clusters or periods of time in education. Comparing students at various points in time during their academic career will provide detailed information to improve the educational experiences for students with EI.

Whether or not behavior intervention plans (BIPs) have a positive effect on students' academic performance will be ascertained through statistical analysis. Multiple sources of data will undergo statistical analysis to determine if in the absences of any academic interventions, academic achievement does increase after the BIP reduces problem behaviors.

Research questions. The following research questions will be addressed:

1. At what grade level cluster (early elementary, late elementary, middle school, or high school) do students with EI have a breakdown in their core academic abilities?

2. At what point in their academic career should students with EI receive intense academic interventions and remediation to prevent school failure and increase basic grade-level core academic skills?
3. Does a reduction in problem behaviors, brought about by the implementation of a BIP, increase academic performance as evidenced by grades?

Significance of the study. Although multiple studies and meta-analyses exist that described the status of students with emotional impairments (EI), the data was not disaggregated unless post-secondary outcomes were discussed. The dismal post-secondary outcomes of students with EI show that often these students have the same end results: failing classes, dropping out of high school, and being incarcerated. The researchers, however, did not identify when this path to poor outcomes begins. Furthermore, they simply provided data and numbers with little direction about what the data suggested or the direction staff and administration within schools should move in.

Limitations of the study.

- The sample size is small. A small sample size cannot create a high confidence interval with such a small margin of error.
- Random probability sampling will not be used when determining the sample. The inability to randomly select the sample will limit the generalizability of the results.
- Part of the study includes a sample of students who have a behavior intervention plan (BIP). Special education teachers and social workers most often write BIPs for students who have extrinsic behavior problems. The results may not apply to students with EI who display intrinsic behaviors.

List of acronyms.

ABC – antecedent, behavior, consequence; a chart used by staff members to document what happens surrounding to gather data about the occurrence of the behavior

BIP – behavior intervention plan; legal document that outlines steps to reduce problem behavior, consequences for occurrence of the problem behavior, and rewards for occurrence of the replacement/appropriate behavior

ED/EI – emotional disturbance – the federal definition includes all variances of state definitions, including emotional impairments (EI), emotional/behavioral disorders (EBD), behavioral disorders; one of the thirteen categories for which students can be found eligible or special education services. The hallmark symptom of a student with EI is extrinsic and/or intrinsic behavior problems

FBA – functional behavior assessment; legal document staff members use to determine the function of the problem behavior and to guide the writing and implementation of a behavior intervention plan

IDEA – Individuals with Disabilities Education Act; the 1990 reauthorization of the 1975 PL 94-142, The Education for All Handicapped Children's Act, which gave students with disabilities the right to a free and appropriate public education

IDEIA – Individuals with Disabilities Education Improvement Act; the 2004 reauthorization of the 1990 Individuals with Disabilities Education Act

IEP – Individualized Education Plan; legal document that provides the student's present level of academic achievement and functioning, list of supplementary supports, aides, and accommodations, and goals

MEAP – Michigan Educational Assessment Program; standardized state testing program that occurs in grades 3-9

WIAT-III – Weschler Individual Achievement Test; education test that determines a student's academic achievement or cognitive achievement level

WJ-III – Woodcock Johnson; education test that determines a student's academic achievement level or cognitive achievement level

CHAPTER TWO

LITERATURE REVIEW

Overview of Emotional Disturbances

Legislation. In 1975 the federal government passed the Education of All Handicapped Children's Act. This act provided students with a disability an education; it defined the categories for which a student could be found eligible, and it listed the tenets that schools had to follow to provide an appropriate education. One of the eligible disability categories includes students with emotional impairments (EI). The prevailing characteristic of students with this disability includes exhibiting behaviors that interfere with their educational progress. In 1997 the federal government reauthorized this law. This reauthorization focused on behavior; if a student exhibited behaviors that interfered with his/her learning or the learning of others, that behavior must be addressed in the Individualized Education Plan (IEP) (Yell & Katsiyannis, 2000). The legislation stated that to address these behaviors school personnel must conduct a functional behavioral assessment (FBA) and implement a behavior intervention plan (BIP) utilizing positive behavior support (PBS) strategies (Yell & Katsiyannis, 2000). The law further established three instances in which a student's actions necessitate a meeting to implement both a FBA and BIP: discipline resulting in removal for more than ten days, removal that marks a change in placement, and placement in an Interim Alternative Education Setting (Yell & Katsiyannis, 2000). However, the law only requires a FBA and BIP when a change of placement occurs because the team deems a behavior a manifestation of the student's disability (Zirkel, 2009). Most often a student who commits actions that are a manifestation of his/her disability falls under the emotional impairment category for eligibility. To determine what type of actions this may include, it proves imperative to know the federal definition of emotional impairments (EI).

Definition. In 1957 Eli Bower conducted a study for the California State Legislature to determine the characteristics of students who have an EI. This comprehensive study, conducted in 200 classes over 75 districts, included information gathered from reading and math standardized tests, academic aptitude tests, rates of absenteeism, age-grade relationships, socioeconomic status, self-perception inventories completed by students and their peers, and teacher's observations regarding a student's health and school adjustment status (Bower, 1982). From this study Bower concluded that students who exhibited symptoms of EI exhibited poor learning, lacked meaningful relationships, behaved inappropriately, felt depressed or unhappy, or had phobias or illnesses develop when presented with attending school (Bower, 1982). The federal government developed their definition of EI based off the findings of Bower's study.

The federal definition of EI, from its inception in 1975 to the last reauthorization in 2004, has changed little. The federal government defined EI as:

> (i) The term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance: (a) an inability to learn which cannot be explained by intellectual, sensory, or health factors; (b) an inability to build or maintain satisfactory interpersonal relationships with peers and teachers; (c) inappropriate types of behavior or feelings under normal circumstances; (d) a general pervasive mood of unhappiness or depression; or (e) a tendency to develop physical symptoms or fear associated with personal or school problems. (ii) The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it is determined that they are

> seriously emotionally disturbed. (Education of All Handicapped Children's Act, 1975)

This definition mirrored Bower's definition with two major differences (Bower, 1982; Forness & Kavale, 2000; Merrell & Walker, 2004). First, the federal government added the inclusionary clause for schizophrenia and autism; the government deleted the autism clause in subsequent reauthorizations of the law due to a new autism spectrum disorder category. Second, the federal definition excluded students labeled socially maladjusted. The majority of states adopted this definition in its entirety or with few alterations (Bower, 1982). Despite this, the definition, since its beginning, has been fraught with controversy. Most importantly, the terminology of the definition remains vague. The federal government offers no guidance to determine what time period constitutes "a long period of time," no suggestions in measuring "to a marked degree," or how to operationally define "adversely affects." Merrel and Walker (2004) assert that the poor definition of emotional impairments (EI) leads to poor services for students with EI; this in turn leads to poor school and post-secondary outcomes. The primary factor that leads to these poor outcomes is the behavioral symptoms of the disability.

Behavioral symptoms. Students with emotional impairments (EI) have behavioral and emotional problems that make up the core symptoms of their disability. The behaviors that lead to the identification of students with EI belong to two categories: internalizing and externalizing behaviors. Externalizing behaviors consist of students acting in a manner in which he/she: often loses his/her temper, acts angry or resentful, seems touchy or easily irritated, blames others for one's mistakes, ignores warnings or reprimands, displays tantrums, acts aggressively, damages property, swears or uses obscene language, verbally or physically abuses others, and exhibits noncompliance (Lambros, Ward, Bocian, MacMillan, & Gresham, 1998; Merrell & Walker,

2004). Internalizing symptoms often go unnoticed by teachers because the student acts in a quiet and shy manner and does not display externalizing behaviors. Internalizing behaviors include acting in a way that: exhibits sad affect, depression, feelings of worthlessness, cries, and has somatic complaints (Lambros et al., 1998;Yell & Katsiyannis, 2000; Merrell & Walker, 2004). Both externalizing and internalizing behaviors make it difficult for the student with the disability to learn; additionally, it makes it difficult for teachers to instruct and other students to learn. It proves imperative to examine the specific characteristics of students with EI to fully understand their functioning in school, both behaviorally and academically, and to develop interventions that prevent poor outcomes for this group of students.

Current Functioning

Demographics. In the US, schools serve approximately 450,000 students under the EI category (Bradley, Doolittle, & Bartolotta, 2008). Approximately 76% – 80% are males (Trout, Nordness, Pierce, and Epstein, 2003). According to Reid, Gonzalex, Nordness, Trout, and Epstein (2004), 70% are white, 23% - 27% are black, and 3% - 5% are Hispanic. The mean IQ ranges from 85 – 94 (Bradley et al., 2008; Reid et al., 2004). The emotionally impaired (EI) population continues to be under identified. According to Bradley et al. (2008), although 8% of all children identified as having disabilities are EI, 1% of those who meet the criteria are still not identified or found eligible for services. Of those who met eligibility criteria for services, various settings serve them.

Placement. According to Wagner et al. (2006), seven out of ten students with EI attend their neighborhood schools. Approximately 18% are educated in separate schools (Bradley et al., 2008), and residential settings serve 40% (Bradley, Henderson, & Monfore, 2004). According to Cullinan and Sabornic (2004), more than 50% get taught in separate classes. Only 25%,

according to Trout et al. (2003), spend greater than 79% of their day in the general education setting. Since students with EI present with difficult external problems, they often receive special education and supplemental related services.

School characteristics. Students with EI have poor outcomes during school. They have lower grades, fail more courses, have higher retention rates, and pass competency exams less often than other students (Landrum, Tankersley, & Kauffman, 2003). Students with EI have low graduation rates, as 43% to 56% drop out, and only 42% earn a high school diploma (Cullinan & Sabornic, 2004). These students have low social skills; 41% score low on measures of social skills, and 33% are low on social behaviors (Bradley et al., 2004). Often the frustration of low academic progress, combined with poor school relationships, lead to behaviors that result in suspensions and expulsions. Bradley et al. (2004) states that despite their disability, schools hold approximately 35% to 55% of students with EI to the same disciplinary standards as other disabled students and non-disabled students; furthermore, these students often have more severe disciplinary standards. Approximately 75% of students with emotional impairments (EI) have received suspensions or expulsions; these students are three times more likely to experience suspensions or expulsions (Bradley et al., 2004). In addition to their suspensions, students with EI are more likely to experience high absenteeism rates (Lane, Carter, Pierson, & Glaeser, 2006). Furthermore, students with EI change schools frequently; 65% change schools more than four times (Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005). These characteristics and circumstances often lead students with EI to display behaviors in the classroom.

Classroom characteristics. Teachers report that students with EI are the least desirable to have in class (Wagner et al., 2005). Additionally, students with EI are the least accepted and most rejected by peers (Cullinan & Sabornic, 2004). They have few friends and lower quality

friendships, often because they lack empathy and have relationship problems (Cullinan & Sabornic, 2004; Lane et al., 2006). This occurs because students with EI display high levels of inappropriate behaviors and low levels of appropriate behaviors. These students often act impulsive, distractible, disruptive, disobedient, destructive, and argumentative (Lane at al., 2006; Wagner et al., 2005). These behaviors often lead to poor academic outcomes.

Academics. Students with EI often have poor academic skills. Approximately 80% of students have below average scores on the Woodcock-Johnson III Test of Academic Achievement (WJ-III) (Lane et al., 2006). Almost 60% fall below in reading, and more than 90% have scores below average in math (Lane et al., 2006). On the WJ-III reading passage, 61% fell below the 25th percentile, and 43% scored below the 25th percentile in math calculation (Wagner et al., 2005). Students with emotional impairments (EI) have an overall achievement level that falls below the 25th percentile, and their skills fall one to two grade levels below their typical peers (Reid et al., 2004). Students with EI also fall behind in academic grades. Only 28% of students earn A's and B's, while 13% earn D's and 9% earn F's (Bradley et al., 2004). Students with EI display academic difficulties early in their schooling career, and these deficits persist over time, remain static, or become worse (Reid et al., 2004). Reid et al. (2004) backs up this statement as he asserts that as these students progress through the grades, they fall further behind their non-disabled peers. Underachievement often causes behavior problems, and behavior problems impede academic learning, causing a negative reciprocal relationship (Trout et al., 2003). Teachers, because of a lack of proper training, often have difficult relationships with these students.

Despite this large database of knowledge about the academic difficulties of students with EI, few studies disaggregate the data by age or grade level. Reid, Gonzalez, and Nordness (2004)

found no statistically significant differences between ages for academic progress. Nelson et al. (2004), on the other hand, found that teens are more likely to experience academic difficulties than children. Likewise, few studies provide school personnel with information regarding the most effective age/grade to provide remediation or intense interventions. Bullis and Walker (1994) come closest to this task. They suggest that prevention should occur in Pre-K to third grade, remediation in fourth through sixth, amelioration in seventh and eighth, and accommodation in grades nine through twelve. Even though this solid foundation to combat the difficulties of students with EI was published years ago, this group continues to have the worst post-secondary outcomes of any disability group.

Post-secondary functioning. Many students with emotional impairments (EI) have bleak post-secondary outcomes. This group of students has low matriculation rates for post-secondary schooling. Only 20% pursue post-secondary education; of those that do, most attend training programs instead of college or universities (Bradley et al., 2008). Students with EI have high unemployment rates; almost 50% are unemployed (Bradley et al., 2008). Those that do obtain employment have more part-time work and tend to work without benefits (Bradley et al., 2008). Even more disturbing is that 66% of students with EI have some interaction with the law (Bradley et al., 2008). According to Reid et al. (2004), 70% have been arrested, 47% have been on probation, 50% have spent time in jail, 9% have spent time in juvenile justice lock up, and 6% have done time in prison. On average, students with EI have two instances of incarceration averaging 320 days per stay (Greenbaum et al., 1996). These statistics clearly show that the overall picture of the current functioning of students with EI is indeed bleak. To prevent these outcomes from happening, special education teachers and social workers implement functional

behavior assessments (FBAs) and behavior intervention plans (BIPs) to help combat behaviors and increase academic achievement.

Functional Behavior Assessment (FBA)

Definition. The major function of the FBA is to operationally define the behavior that impedes the academic progress of students with EI. In order to extinguish or alter a behavior, the function of the behavior must be identified. The function of behaviors usually falls into one of the following categories: access to preferred activities, attention, escape/avoidance (tasks or people), and internal stimulation (Gresham, Watson, & Skinner, 2001). To identify the function of the behavior, the FBA identifies events that predict and maintain the problem behavior, giving information about the occurrence and non-occurrence of the behavior (Gable, Quinn, Rutherford, & Howell, 1998). According to Gable et al. (1998) this information will then improve the efficacy of the behavior intervention plan (BIP).

A functional behavior assessment (FBA) includes three major parts: setting events, consequences, and collection/analysis of the data. The setting events describe events or situations that happen before the behavior which makes that behavior more likely to occur (March & Horner, 2002). The setting events could happen anywhere from hours to minutes before the behavior, but they have a functional relationship to the target behavior (Gresham et al., 2001).

The consequences section sets out in detail what will happen to the student if the target behavior occurs (March & Horner, 2002). Consequences fall into two categories: positive or negative punishment. Positive punishment occurs when a student receives a negative consequence after the target behavior occurs (Gresham et al., 2001). Negative punishment occurs when the student gets removed from a pleasant situation, such as a person or preferred activity (Gresham et al., 2001).

The most important step of the FBA is the formulation of a hypothesis statement. Before writing a hypothesis statement, staff must collect and analyze data. Informal/indirect data includes interviews with staff, other students, and the target student, records review, checklists, and rating scales (Gable et al., 1998; Gresham et al., 2001). Formal/direct data includes an antecedent-behavior-consequence chart and observations (Gable et al., 1998; Gresham et al., 2001). For a full review of ways to collect data, please refer to Gresham, Watson, and Skinner, 2001. To analyze the data, staff can create a problem pathway chart, which will sequentially list the setting events, antecedents, behaviors, and consequences, identifying the variables staff should manipulate (Gable et al., 1998). The hypothesis statement states the events that precede the behavior, the behavior, the consequence, and the possible function of the behavior (Gable et al., 1998). The hypothesis statement must originate from the data observed/collected, and the variables must be measurable and able to be manipulated (Gresham et al., 2001). An example hypothesis statement could be: "In [situation], when [antecedent] occurs, the student will [behavior]. When this happens, [consequence] occurs. Thus, the function of the behavior is [specific function]" (Scott, Anderson, & Spaulding, 2008). The last part of the functional behavior assessment (FBA) includes the testing of the hypothesis statement. If the behavior does not reduce once the behavior intervention plan (BIP) is written and implemented, the function of the behavior was incorrect; therefore, the FBA needs to be redone to formulate a new hypothesis statement. However, if the hypothesis proves true then the BIP will successfully reduce the behavior. The use of a competing behaviors pathway model can help to set up the interventions for the BIP. This model includes the setting events and antecedents, the target behavior, the replacement behavior, and the consequences (Gresham et al., 2001). The competing behaviors pathway model links behavioral interventions to the data collected in the FBA, and it identifies

the skills and values of the people who will implement the plan, thus increasing treatment integrity (Gresham et al., 2001). The FBA identifies the function of the behavior - escape, attention, or avoidance - and provides a starting point for the behavior intervention plan (BIP).

Effectiveness. Functional behavior assessments (FBAs) help to effectively write and implement BIPs. However, the studies that researched their effectiveness have yielded mixed results; furthermore, much of the data has vague descriptions regarding its effectiveness. In 2001, Ervin et al. conducted a meta-analysis to look at the current state of FBAs. They found that over 98% of the studies included reported reductions in the target behavior. Similarly, Reid and Nelson (2002) conducted a review of literature to determine the effectiveness of FBAs. They reviewed fourteen studies. Two did not show that the FBA had any positive effect on the targeted behavior. Two of the studies included in their review showed only minor behavioral improvements. Seven of the remaining studies stated that the FBA reduced the targeted behavior to almost zero, and the appropriate behavior increased by almost 100%. Furthermore, Gage, Lewis, and Stichter (2012) report, based on their meta-analysis, that FBA-based interventions reduced target behaviors by 70.5%. These studies support the common research assertion that FBAs decrease problem behaviors.

Nahgahgwon, Umbreit, Liaupsin, & Turton (2010) conducted a case study involving three students in which they utilized FBAs to reduce target behaviors. They found that during the testing of the hypothesis statement, one student increased on-task behavior from 70% to 90%, a second increased on-task behavior from 68% to 85%, and the third increased on-task behavior from 65% to 78%.

Conversely, a meta-analysis conducted by Gresham et al. (2004) compared the effectiveness of behavior intervention plans (BIPs) when they were and were not written using

information collected from a FBA. They found higher effect sizes for BIPs that did not utilize functional behavior assessments (FBAs) than those that did use information from FBAs. This data contradicts previous research studies that found that FBAs proved effective in reducing problem behavior.

In addition to the conflicting data, many research studies speak in generalities and do not include any empirical data to back up their assertions. For example, Lane, Umreit, and Beebe-Frankenberger (1999) state that, "Although the database is indeed sparse (*n*=9), interventions based on the results of functional assessment data have been quite successful in decreasing maladaptive behaviors…and increasing adaptive behaviors…" However, the authors provide no citations or statistical data that backs up this assertion. This occurs frequently in the literature and indicates that more studies need to occur to determine the effectiveness of FBAs in reducing problem behaviors.

Behavior Intervention Plan (BIP)

Definition. The purpose of a BIP is to teach a new behavior that effectively replaces the target behavior by achieving the same function. Like the FBA, the BIP also has multiple components. The first part, according to Gable et al. (1998), modifies the setting events, the situations and events that most likely cause the behavior to occur, if possible (many times the setting events take place outside the school and staff cannot manipulate them). The second part is manipulation of antecedents. Gable et al. (1998) state that the behaviors can be prevented if staff can change the events that happen immediately before the behavior occurs. Manipulation of antecedents can include altering the schedule of activities, changing the size and composition of cooperative groups, providing pre-corrections for the targeted behavior, and providing frequent breaks (Gresham et al., 2001). Along with modifying the setting events and antecedents, staff

also has to implement curriculum changes that will help prevent or alter the behavior (Gable et al., 1998). These can include shortening task length, alternating between easy and difficult tasks, and modifying the requirements for the task (Gresham et al., 2001). Most importantly, the behavior intervention plan (BIP) teaches replacement behaviors. The staff must teach an appropriate behavior that achieves the same function of the target behavior (Gable et al., 1998). The Matching Law, which states that the occurrence of a behavior will match the rate of reinforcement, often accomplishes this; thus, the appropriate behavior must increase in value through frequent reinforcement so that the target behavior will reduce in value (Gresham et al., 2010). If the replacement behavior truly serves the function of the target behavior, that behavior will decrease and extinguish, and the replacement behavior will increase and generalize to other settings (Gable et al., 1998). The BIP then spells out the intervention strategies. These steps outline the consequences for the target behavior, the rewards for the replacement behavior, and the cues used by staff to help the student choose the replacement behavior over the target behavior (Gable et al., 1998). The BIP also outlines emergency and crisis planning steps staff will follow if the student becomes dangerous to him/herself or others (Gable et al., 1998). Last, the BIP, according to Gable et al. (1998), sets out dates for the team to review the BIP and data to determine if it has worked, if it needs alteration, or if it needs to be completely rewritten. If the BIP works effectively, the target behavior should decrease and academic output/achievement should increase at a noticeable level.

Effectiveness. Although a large literature base that describes BIPs exists, a dearth of studies investigates their effectiveness. Kincaid, Knoster, Harrower, Shannon, and Bustamante (2002) sent out a survey regarding important aspects of BIPs. Of the 374 respondents, 82% stated that the behavior for students with BIPs decreased; 78% indicated that the intensity of the

behavior decreased, and 76% responded that the duration of the behavior had also decreased. This shows that teachers easily detect a decrease in behaviors after the implementation of a behavior intervention plan (BIP).

In 2004 Newcomer and Lewis conducted a case study with three students to determine if BIPs based on data from functional behavior assessments (FBAs) effectively reduced behaviors. One child showed a 6% decrease in behavior, a second child showed a 5% decrease, but the third child showed only a 2% decrease in behavior. While a decrease in behaviors occurred, it did not occur at the same level other studies have reported.

Ingram, Lewis-Palmer, and Sugai (2005) conducted a case study of two students to determine the effectiveness of BIPs. During baseline, disruptive behaviors occurred an average of 49% of the observed intervals for one student, with a range of 35% to 77%. After implementation of the BIP, the student's problem behaviors reduced to 9% of the intervals with a range of 5% to 13%. The second student's behaviors occurred an average of 61% of the intervals with a range of 21% to 92%. After implementation the student's behavior occurred an average of 10% of the intervals with a range of 0% to 22%. BIP implementation caused a marked decrease in target behaviors in these case studies.

The majority of studies that do investigate the effectiveness of BIPs deal with externalizing behaviors. Christensen, Young, and Marchant (2007), however, investigated whether a BIP can increase appropriate behavior and decrease inappropriate behaviors of a student with internalizing behavior problems. During the baseline assessment the occurrence of the student's appropriate behaviors ranged from 26% to 62%. After implementation the student's appropriate behavior increased by 57% and ranged from 85% to 98%. This showed that BIPs,

although designed for externalizing behaviors, also have a positive effect on internalizing behavior problems.

Nahgahgwon et al. (2010) also conducted a case study involving three students that examined on-task behavior to determine effectiveness of the behavior intervention plan (BIP). They found that after implementation one student's on-task behavior increased from 33% to 92%, a second student increased from 65% to 87%, and a third student increased from 53% to 86%. Although the authors provided no empirical data about the behaviors, one can infer that the increase in on-task behavior occurred because of a decrease in behaviors.

Cook et al. (2012) analyzed 99 BIPs to determine their effectiveness. They found a positive correlation between BIPs and reductions in behavior problems, increases in appropriate replacement behaviors, increases in general positive behaviors, and increases in overall behaviors. The correlation between BIPs and behavior reductions was 0.47, 0.41 for increasing replacement behaviors, 0.31 for increases in general positive behaviors, and 0.31 for increases in overall behavior. This shows that a moderate positive relationship exists between the BIP and increases in general behavior and overall behavior. Most importantly, strong positive relationships exist between increases in appropriate behaviors and reductions in target behaviors achieved through BIPs as indicated by the Pearson's rule of thumb.

Behavior intervention plans (BIPs) and academics. A paucity of research studies targets the link between BIPS and academics. Artesani and Mallar (1998) conducted a case study to determine if BIPs improved academics. After implementation of the BIP, behavior problem frequency decreased from 18 times per week to one time per week. The a mount of time the two students required a one-to-one aide decreased. They found that once behaviors decreased, academic engagement increased from 38% to 94%. In this case behavior

intervention plans (BIP) successfully decreased the target behavior and improved academic functioning.

Nelson, Martella, and Marchand-Martella (2002) implemented an empirical study using a control group. For the experimental group that had a BIP implemented, statistically significant improvements occurred in reading, language arts, spelling, science, and social studies from the pretest to the posttests based on the Comprehensive Test of Basic Skills. Furthermore, the academic achievement remained static for the control group. Again, this study showed that a decrease in behaviors led to an increase in academic achievement.

March and Horner (2002) investigated how BIPs fared on behaviors and academics depending on the function of the behavior. Those who sought adult attention had an 80% decrease in behaviors while those that sought peer attention had a 62% decrease. Those that used their behavior to escape, however, only had a 27% reduction in behavior. Despite this, 40% had at least a 50% reduction in behavior. The rate at which behavior problems occurred prior to implementation ranged from 30% - 46% of the time but dropped to 17% - 20% after implementation. During baseline, academic engagement ranged from 34% to 38% and increased to 65% - 73% after implementation, a 27% - 39% improvement. This study showed that a decrease in behavior did cause a collateral improvement in academics.

Christensen et al. (2007) investigated the link between a BIP and behavior reduction for a student with internalizing behavior problems. During baseline the student completed 2.1 tasks per period. After implementation of the BIP the student completed 6.5 tasks per period, a 4.4 task increase. This showed that a decrease in behaviors caused an increase in academic productivity.

In 2012 Lochman et al. looked at the link between behavior intervention plans (BIPs) and academics. They implemented a prevention program for aggressive behaviors. They found that

there was a statistically significant difference for language arts but not math. While this study did not provide quantitative data, the authors do conclude a stronger link exists between behavior and language skills than behavior and math skills.

Limitations and future directions. Based on the data, it appears that functional behavior assessments (FBAs) and BIPs do have a positive effect on academics. However, the research data is sparse. Additionally, the current research studies fail to provide information that is vital to determine effectiveness: types of behaviors, frequency of behaviors, settings of the interventions, and details on the implementation of the BIPs. Furthermore, many of the studies determine effectiveness based on the percentage of academic engagement or the result of a single test. Future studies should use multiple objective measures such as academic achievement, grades, and standardized testing instead of subjective measures like academic engagement or on-task behavior. Furthermore, research needs to focus on individual deficits. Researchers must determine the areas in which students have academic deficits, and after implementation, those specific areas need to be assessed again. Only then can researchers truly determine if a decrease in behaviors does indeed improve academics.

CHAPTER THREE

DESIGN AND METHODOLOGY

Introduction

The aim of this study is to supplement the knowledge base of the academic status and characteristics of students with emotional impairments (EI). Data from students with EI in various grade clusters will be looked at to determine a common point of academic breakdowns. Additionally, pre and post-behavior intervention plan (BIP) data will be analyzed to determine the effect of BIPs and reductions of behavior on academic progress. The methodology employed to achieve this goal is described in this chapter. The topics include research design and an explanation of why this design proves appropriate for the study and goals. The chapter includes a description of the setting and participants, as well as the method for selecting the sample. The data collection methods will be documented. The types and purpose of data collected will be explained. Last, the types of statistical methods used to analyze the data are described in this chapter.

Restatement of Problem

The distinguishing characteristic of students with EI is behavior problems. Even though a reduction in behavior problems serves as the primary focus for these students, researchers have frequently documented the academic difficulties for these students. Despite this, much of the research that includes students with EI deals with behavior problems. Those studies that address the academic difficulties simply compile data about students with EI, and much of the data gets reported in means instead of being disaggregated. Furthermore, many of the authors did not provide guidance to schools on how to use the data to make improvements for the affected students or guidance as to when targeted interventions should occur.

The main reason research focuses on problematic behaviors comes from the prevailing thought that problem behaviors must decrease before students can focus on academics and that any decrease in problematic behaviors will automatically increase academic progress. Those studies that do look at academics measure progress through task-completion or academic engagement. Studies that use objective measures of academic progress, such as grades, achievement testing, or standardized testing do not exist. This makes it difficult to determine if behavior intervention plans (BIPs) do indeed have an impact on academic progress.

Research Questions

1. At what grade level cluster (early elementary, late elementary, middle school, or high school) do students with EI have a breakdown in their core academic abilities?
2. At what point in their academic career should students with EI receive intense academic interventions and remediation to prevent school failure and increase basic grade-level core academic skills?
3. Does a reduction in problem behaviors, brought about by the implementation of a BIP, increase academic performance as evidenced by grades?

Cross Sectional Design

Descriptive research, often employed in educational research studies, includes cross sectional designs. According to Best (1970), descriptive research methods look at how "*what exists* is related to some preceding event that has influenced or affected a present condition or even." Researchers use cross sectional design when they want to study subjects at different points in time; therefore, it gives a "snapshot" of the sample at a given point in time (Cohen, Manion, & Morrison, 2007). This design has many benefits: it allows different groups to be

compared, it limits the possibility of control effects, the researcher can easily chart population-wide features at different points in time, it allows for a large sample size, and the researcher can conduct inferential statistics to compare the subgroups (Cohen, Manion, & Morrison, 2007).

This type of research design proves appropriate for the study employed here. Though it is imperative to disaggregate the research by grades, the ability to do so in this study will be limited due to the small sample size. Data from students in grades kindergarten through twelfth will be analyzed. They will be clustered into grade groups: early elementary, grades K-2; late elementary, grades 3-5; middle school, grades 6-8; and high school, grades 9-12. A "snapshot" of when students with emotional impairments (EI) first start to experience academic difficulties will be provided. Cross sectional design will allow a quick study of students and their average progress over a few years since a longitudinal design is not feasible given the time restrictions of this study. Additionally, this design will allow the easy charting of trends that appear after data analysis. The sample can be compared using different subgroups, specifically the qualifying criteria.

Research Design

Participants. The participants in this study all meet eligibility for special education services under the EI category. Data for students in kindergarten through twelfth grade will be looked at to answer research questions one and two. Students in various grades K-12 will be used to answer research question three. The large grade span proves necessary to retain an adequate sample size; the emotionally impaired (EI) population is small, and the number of students with EI who have a behavior intervention plan (BIP) is even smaller.

Setting. The study will take place in three school districts. All districts are located in the suburbs of Metro-Detroit. District L and District F have a small student size, averaging

approximately 4,010 and 5,398 respectively. District C has a large student size at 16, 456. District L has about 340 students with disabilities, or 8.48% of their school population. Seven students with EI attend school in this district; this disability category makes up 3% of the district's special education population. District F has around 584 students with disabilities, comprising 10.82% of their school population; this district has 34 students with EI, composing 5.8% of the district's special education students. District C has approximately 1816 students with disabilities, making up 11% of their student population. The district has 72 students with EI, approximately 4.1% of their entire special education population.

Sample selection. Students with EI make up a small percentage of all students with disabilities. Therefore, the available sample of students with EI will also be small. Random probability sampling will not be used. To achieve statistical power, the entire sample available will be used. Due to the small sample size, the same students may be used in both sample sets.

Data Collection, Analysis, and Reporting

Data collection. After receiving approval from the school districts and Wayne State University's Internal Review Board (IRB), the researcher made a follow-up appointment with each district's special education directors. In this meeting, a strategy was determined for dissemination of the research information and obtaining informed consent and assent if needed. Wayne State University's IRB determined that parental consent and child assent was not required. These were waived because no identifying information was collected and the study posed minimal risk to the participants.

After obtainment of IRB approval, the director for each district provided access to paper and electronic special education files for the students identified as participants in the study. For each student, data from the previous school year was compiled; for students used to answer

research question three, two data points, pre and post-behavioral intervention plan (BIP) implementation, was collected. The following data points were collected: grade, gender, qualifying criteria, grades, achievement testing scores, standardized state testing scores, and a BIP for students included in the sample for research question three.

Once the researcher accessed the necessary documents, the coding process began. The required data points were compiled in a spreadsheet (See Appendix A). Within that spreadsheet each student was given a code under which the data was recorded. No identifying information was recorded. Once all the required information was entered, the researcher will move on to the next participant. No link between participants and the study exists.

Explanation of data points.

Grades. Classroom grades will be used to determine an increase in academic achievement. This data point gives the most information because they reflect the students' day-to-day performance. Although researchers have proposed that classroom grades lack validity to determine academic achievement (See Allen, 2005), this data point proves useful because it incorporates the students' work throughout a year instead of data from one test given on one day.

Woodcock Johnson III (WJ III). The Woodcock-Johnson III (WJ III) measures academic achievement. The WJ III tests achievement in math, written expression, and reading. It uses a cluster of tests because, "Cluster interpretation results in higher validity because scores are based on a broad, multifaceted picture of each ability instead of on a single, narrow ability" (McGrew & Woodcock, 2001). The test provides information on grade and age equivalents as well as percentiles for each broad test and subtest.

Wechsler Individual Achievement Test III (WIAT-III). The Wechsler Individual Achievement Test III (WIAT-III) measures academic achievement. It measures academic

achievement in reading, written expression, math, and oral expression. The WIAT-III is frequently used because the results can identify academic strengths and weaknesses, aid in special education placement decisions, and suggest annual and benchmark IEP goals (Breaux, 2009). The score report yields raw and standard scores, grade and age equivalents, and percentiles.

Michigan Educational Assessment Program (MEAP). The MEAP is the state's yearly-standardized tests. At the elementary and middle school level the test measures the students' proficiency on Michigan's grade level content expectations (GLCE). These tests determine if students have achieved proficiency in academic areas.

Assuring fidelity and trustworthiness. Del Siegle (2002) states that research must, "demonstrate its truth value, provide the basis for applying it, and allow for external judgments to be made about the consistence of its procedures and the neutrality of its findings or decisions." To do this, he identifies four constructs that must be addressed in research: truth value, applicability, consistency, and neutrality. In terms of quantitative data, truth value correlates with internal validity, applicability with external validity, and consistency with reliability.

The Woodcock-Johnson III (WJ III) has high reliability and validity. Reliability statistics are reported across ages for each test cluster. The following coefficients give the reliability for each cluster: Total Achievement: 0.93 – 0.98; Broad Reading: 0.86 – 0.97; Broad Math: 0.93 – 0.97; Broad Written Language: 0.91 – 0.97; Academic Skills: 0.93 – 0.98 (McGrew & Woodcock, 2001). Test-retest reliability coefficient ranges across ages are as follows: Total Achievement: 0.95 – 0.99; Broad Reading: 0.89 – 0.97; Broad Math: 0.91 – 0.98; Broad Written Language: 0.87 – 0.97; Academic Skills: 0.90 – 0.98 (McGrew & Woodcock, 2001). These coefficients support the assertion that the WJ III results in consistent and stable scores over.

The WIAT-III also has high reliability and validity coefficients. The following coefficients support the grade-based reliability: Reading: 0.98; Math: 0.96, Written Expression: 0.95; Total Achievement Composite: 0.98 (Breaux, 2009). This demonstrates that the WIAT-III is a highly reliable test. Breaux (2009) also report the test-retest reliability coefficients. The test-retest reliability is broken down into two grade ranges: PreK-5 and 6-12. The following are the coefficients for each group respectively: Reading: 0.91 and 0.94; Math: 0.91 and 0.92; Written Expression: 0.84 and 0.88; Total Achievement Composite: 0.92 and 0.96. These scores corroborate the internal-consistency validity and provide strong support for reliability.

The validity of the WJ-III and the WIAT-III often get reported in comparison to other achievement tests. The following validity correlation coefficients compare the composites of the WJ-III and the WIAT-III. The following coefficients compare the WIAT-III to the WJ III: WIAT-IIII Total Achievement Composite to WJ III Total Achievement: 0.65; WIAT-III Reading Composite to WJ III Broad Reading: 0.67; WIAT-III Mathematics Composite to WJ III Broad Math: 0.70; WIAT-III Written Expression to WJ III Broad Written Language: 0.47 (McGrew & Woodcock, 2001). These results suggest that the mean scores on both instruments show valid test construction.

Data analysis. The data will be broken down into descriptive statistics and inferential statistics. The inferential statistics will detail the data collected. The descriptive statistics will include frequency distributions regarding the sample such as age, gender, and qualifying criteria. It will also include the mean score of grades, state-testing scores, and achievement scores for each subgroup: age, gender, qualifying criteria, and district. Additionally, the frequency distributions regarding the targeted problem behavior from the behavior intervention plans (BIPs) and the functions of those behaviors will be reported.

The researcher will compute all inferential statistics using exact tests, which permits the most statistical power for sparse data sets (Sawilowsky, 2014). First, a One-Way ANOVA test will check for statistically significant differences for all three research questions. This test will check for statistically significant differences in grades, state testing scores, and achievement testing scores between grade clusters. All grade clusters will be compared. Statistically significant scores between clusters may indicate a breakdown in academic progress as students progress through grades or positive academic progress after BIP implementation. A Factorial ANOVA test will determine if statistically significant differences exist because of the any of the independent variables. The data collected - grades, state testing scores, and achievement testing scores- will act as the dependent variables and the subgroups – age, gender, qualifying criteria, and districts – will act as the independent variables.

Table 1

Purpose of Statistical Tests

	Statistical Test			**Purpose**
Data Points	Distribution Table	One-Way Anova	Factorial Anova	
Age/grade	x			Provide descriptive statistical information about the sample
Age/grade		x		Determine if a statistically significant difference exists in regards to grades, state testing, or achievement testing
Age/grade			x	Determine if statistically significant differences exist because of the independent variables
Gender	x			Provide descriptive statistical information about the sample
Gender		x		Determine if a statistically significant difference exists between grades
Gender			x	Determine if statistically significant differences exist because of the independent variables
Qualifying criteria	x			Provide descriptive statistical information about the sample
Qualifying criteria		x		Determine if a statistically significant difference exists between grades
Qualifying criteria			x	Determine if statistically significant differences exist because of the independent variables
BIP targeted behavior	x			Provide descriptive statistical information about the sample
Classroom grades	x			Provide descriptive statistical information about the sample
Classroom grades		x		Determine if a statistically significant difference exists between grades
State testing	x			Provide descriptive statistical information about the sample
State testing		x		Determine if a statistically significant difference exists between grades
Achievement testing	x			Provide descriptive statistical information about the sample
Achievement testing		x		Determine if a statistically significant difference exists between grades
Districts			x	Determine if statistically significant differences exist because of the independent variables

CHAPTER FOUR

ANALYSES OF DATA

This chapter presents the results of the data analyses. It describes the sample used and the statistical methods employed to answer the research questions. This chapter is divided into three parts. The first part uses descriptive statistics to provide demographics about the sample. The second section details the variables for the instruments used in data collection. The last section details the results of the statistical analyses of the collected data.

The purpose of this study was to gain further information on the academic functioning of students with EI. The study was designed to answer three pertinent questions regarding the academic status of students with EI. First, is there a grade cluster level at which students with EI begin to experience academic failure? Second, at what grade level should academic interventions and remediation occur to prevent failure? Last, does reduction of behaviors through a BIP result in academic improvements?

Description of the Sample

Research questions one and two. One hundred thirteen students in grades k-12 who were eligible for special education services under the EI category participated in the study. The study was comprised of 39 females and 74 males. The grades ranged from k to 12 (see Table 2). The largest groups were sixth and seventh graders (n=16, 14.2%), and the smallest groups were kindergarten and twelfth grade (n=1, 0.9%). The participants were grouped into grade clusters for statistical analysis: early elementary grades k-2, late elementary grades 3-5, middle school grades 6-8, and high school grades 9-12. The largest group was middle school, grades 6-8 (n=46, 40.8%), and the smallest group was early elementary, grades k-2 (n=9, 8.1%) (see Table 3).

Table 2
Grade Levels

Grade	Frequency	Percent	Valid Percent	Cumulative Percent
k	1	0.9	0.9	0.9
1.00	2	1.8	1.8	2.7
2.00	6	5.3	5.3	8.0
3.00	7	6.2	6.2	14.2
4.00	11	9.7	9.7	23.9
5.00	9	8.0	8.0	31.9
6.00	16	14.2	14.2	46.0
7.00	16	14.2	14.2	60.2
8.00	14	12.4	12.4	72.6
9.00	8	7.1	7.1	79.6
10.00	15	13.3	13.3	92.9
11.00	7	6.2	6.2	99.1
12.00	1	0.9	0.9	100.0
Total	113	100.0	100.0	

Table 3
Grade Level by Cluster

Grade	Frequency	Percent	Valid Percent	Cumulative Percent
k-2	9	8.0	8.0	8.0
3-5	27	23.9	23.9	31.9
6-8	46	40.7	40.7	72.6
9-12	31	27.4	27.4	100.0
Total	113	100.0	100.0	

Participants came from three different districts. Seventy-two students came from district C, 34 from district F, and seven from district L. District C had six students in the early elementary cluster, 16 in the late elementary cluster, 26 in the middle school cluster, and 24 in the high school cluster. Three students were in the early elementary cluster, ten in the late elementary cluster, 18 in the middle school cluster, and three in the high school cluster for district F. District L had no students in the early elementary cluster, one in the late elementary cluster, two in the middle school cluster, and four in the high school cluster (see Table 4).

Table 4
Grade Cluster by District

	Grade				
	k-2	3-5	6-8	9-12	Total
District C	6	16	26	24	72
District F	3	10	18	3	34
District L	0	1	2	4	7
Total	9	27	46	31	113

Students who are eligible for special education services under the EI category fall into one or more of five possible categories: inappropriate behavior or feelings under normal circumstances; an inability to build or maintain satisfactory interpersonal relationships within the school environment; other maladaptive behaviors related to schizophrenia or similar disorders; tendency to develop physical symptoms, pains or fears associated with personal or school problems; general pervasive mood of unhappiness or depression. Most students were eligible under multiple qualifying criteria. One hundred one students were eligible under the inappropriate behaviors category, 73 under the interpersonal relationships, 12 under the other maladaptive behaviors, 38 under physical symptoms/fears, and 70 under unhappiness/depression. In terms of grade clusters, students in the early elementary grade cluster had eight students eligible under inappropriate behaviors, six under interpersonal relationships, one under other maladaptive behaviors, three under physical symptoms/fears, and five under unhappiness/depression. Twenty-five students in late elementary were eligible under inappropriate behaviors, 23 under interpersonal relationships, five under other maladaptive behaviors, nine under physical symptoms/fears, and 11 under unhappiness/depression. For middle school, 44 students were eligible under inappropriate behaviors, 32 under interpersonal relationships, four under other maladaptive behaviors, 13 under physical symptoms/fears, and 34 under unhappiness/depression. Last, in the high school cluster 24 students were eligible under

inappropriate behaviors, 12 under interpersonal relationships, two under other maladaptive behaviors, 13 under physical symptoms/fears, and 20 under unhappiness/depression (see Table 5).

Table 5
Qualifying Criteria by Grade Cluster

	Qualifying Criteria				
Grade Cluster	Inappropriate Behavior	Interpersonal Relationships	Other Maladaptive Behavior	Physical Symptoms/ Fears	Unhappiness/ Depression
k-2	8	6	1	3	5
3-5	25	23	5	9	11
6-8	44	32	4	13	34
9-12	24	12	2	13	20
Total	101	73	12	38	70

Research question three. Eight students in grades k-12 participated in this part of the research study. All students were eligible for special education services under the EI category and had a current BIP in place. The sample consisted of one student in second, sixth, seventh, eighth, ninth, and eleventh grades, and two students in the fifth grade. Two students attended district C, two attended district F, and four district L. Seven students were male and one was female. All eight students were eligible under the inappropriate behaviors category, six under interpersonal relationships, none for other maladaptive behaviors, one under physical symptoms/fears, and five under unhappiness/depression (see Table 6). Each of the eight students had a target behavior identified in his/her BIP. Six students had a target behavior of aggression and two had non-compliance. Within the BIP the function of the target behavior was identified. One student exhibited behaviors to gain attention, three to avoid, one for control, one to escape, and two to gain power (see Table 7).

Table 6
Gender and Eligibility Crosstabulation

Gender	Inappropriate Behavior	Interpersonal Relationships	Other Maladaptive Behavior	Physical Symptoms/ Fears	Unhappiness/ Depression
Male	7	6	0	0	4
Female	1	0	0	1	1
Total	8	6	0	1	5

Table 7
Behavior and Function Crosstabulation

	Function					
Behavior	Attention	Avoidance	Control	Escape	Power	Total
Aggression	1	2	1	1	1	6
Non-Compliance	0	1	0	0	1	2
Total	1	3	1	1	2	8

Description of Scaled Variables

Research questions one and two. Three main instruments were used in data collection. Second semester grades were recorded for each student who participated in the study. Letter grades F-A+ were transformed into numerical grades 0-12 respectively. The mean for each subject area, math, English, social studies, and science, was computed. The mean for math scores was 5.05, equaling a C (n=109), English was 4.5 or a C (n=108), social studies was 4.65 or a C (n=106) and science was 4.85 or a C (n=106). The mean for each subject area, shown in Table 8, was also computed for each grade level cluster.

Table 8
Mean Grades by Grade Cluster

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Math	k-2	8	7.50	4.81	1.70	3.48	11.52	.00	11.00
	3-5	26	6.19	2.74	0.54	5.08	7.30	1.00	12.00
	6-8	45	4.80	3.85	0.57	3.64	5.96	.00	11.00
	9-12	30	3.77	3.80	0.69	2.35	5.19	.00	11.00
	Total	109	5.05	3.79	0.36	4.33	5.77	.00	12.00
English	k-2	8	4.13	4.22	1.49	0.59	7.66	.00	11.00
	3-5	25	4.08	4.73	0.95	2.13	6.03	.00	11.00
	6-8	44	4.66	3.54	0.53	3.58	5.74	.00	11.00
	9-12	31	4.71	3.56	0.64	3.40	6.02	.00	11.00
	Total	108	4.50	3.86	0.37	3.76	5.24	.00	11.00
Social Studies	k-2	8	6.25	4.89	1.73	2.16	10.34	.00	11.00
	3-5	26	6.12	3.43	0.67	4.73	7.50	.00	11.00
	6-8	45	4.22	3.53	0.53	3.16	5.28	.00	11.00
	9-12	27	3.48	3.00	0.58	2.29	4.67	.00	10.00
	Total	106	4.65	3.61	0.35	3.96	5.35	.00	11.00
Science	k-2	8	6.38	4.93	1.74	2.26	10.49	.00	11.00
	3-5	26	6.04	2.34	0.46	5.09	6.98	2.00	10.00
	6-8	44	4.68	3.30	0.50	3.68	5.69	.00	11.00
	9-12	28	3.57	3.20	0.61	2.33	4.81	.00	10.00
	Total	106	4.85	3.32	0.32	4.21	5.49	.00	11.00

The achievement test scores are reported as a standard score. For each test the average is 100 with a standard deviation of 15. The mean for each grade cluster was computed (see Table 9). The mean for math achievement was 87.75 (n=84), reading 89.82 (n=84), and writing 92.07 (n=69).

Table 9

Mean Achievement Scores by Grade Cluster

					95% Confidence Interval for Mean	
Math Achievement	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound
k-2	6	104.33	23.85	9.74	79.31	129.36
3-5	22	90.64	21.20	4.52	81.24	100.04
6-8	33	88.00	9.14	1.59	84.76	91.24
9-12	23	80.30	10.74	2.24	75.66	84.95
Total	84	87.75	15.76	1.72	84.33	91.17

					95% Confidence Interval for Mean	
Reading Achievement	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound
k-2	8	87.13	19.72	6.97	70.64	103.61
3-5	21	90.62	22.72	4.96	80.28	100.96
6-8	35	90.71	15.86	2.68	85.27	96.16
9-12	20	88.50	17.46	3.91	80.33	96.67
Total	84	89.82	18.21	1.988	85.87	93.77

					95% Confidence Interval for Mean	
Writing Achievement	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound
k-2	6	90.33	21.36	8.72	67.92	112.75
3-5	17	91.23	24.50	5.89	78.74	103.73
6-8	29	89.72	15.96	2.96	83.66	95.79
9-12	17	97.53	15.53	3.77	89.54	105.52
Total	69	92.07	18.55	2.23	87.61	96.53

Students in grades three through eight take the MEAP. Each grade takes different sections of the test. The MEAP gets scored on a scale of one to four: one means the student performed at an advanced level, a two means the student is proficient, a three means the student is partially proficient, and a four means the student is not proficient. The mean for math MEAP

was 3.44 (n=57), reading 2.72 (n=54), science 3.71 (n=54), social studies 3.33 (n=15), and writing 2.80 (n=20). Averages for the grade clusters were also computed in Table 10. The k-2 cluster was not analyzed because MEAP testing does not start until grade three.

Table 10

Mean State Testing Scores by Grade Cluster

						95% Confidence Interval for Mean	
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound
Math MEAP	3-5	21	3.24	0.83	0.18	2.86	3.62
	6-8	35	3.57	0.65	0.11	3.35	3.80
	9-12	1	3.00	.	.	.	.
	Total	57	3.44	0.73	0.097	3.24	3.63
Reading Meap	3-5	18	2.67	0.69	0.16	2.33	3.01
	6-8	35	2.77	0.84	0.14	2.48	3.06
	9-12	1	2.00	.	.	.	.
	Total	54	2.72	0.79	0.11	2.51	2.93
Science Meap	3-5	4	3.75	0.50	0.25	2.95	4.55
	6-8	10	3.70	0.67	0.21	3.22	4.18
	9-12	0	.	.	.	.	.
	Total	14	3.71	0.61	0.16	3.36	4.07
Social Studies	3-5	1	4.00	.	.	.	.
Meap	6-8	12	3.33	0.49	0.14	3.02	3.65
	9-12	2	3.00	.00	.00	3.00	3.00
	Total	15	3.33	.49	0.13	3.06	3.60
Writing Meap	3-5	6	2.67	0.52	0.21	2.12	3.21
	6-8	13	2.85	0.69	0.19	2.43	3.26
	9-12	1	3.00	.	.	.	.
	Total	20	2.80	0.62	0.14	2.51	3.09

Research question three. Grades were collected pre and post implementation of the BIP. Table 11 summarizes the results. The mean pre-math grade was 2.13 (n=8) or a D, English was 2.13 (n=8) or a D, social studies 4.29 (n=7) or a C-, and science 3.00 (n=7) or a D+. The post-math mean grade was 3.00 (n=8) or a D+, English was 1.63 (n=8) or a D, social studies was 4.29 (n=6) or a C-, and science was 3.00 (n=6) or a D+.

Table 11

Pre and Post Mean Grades

	N	Mean	Std. Deviation	Minimum	Maximum
Pre Math	8	2.13	3.94	.00	9.00
Post Math	8	3.00	4.11	.00	10.00
Pre English	8	2.13	3.87	.00	11.00
Post English	8	1.63	1.99	.00	5.00
Pre Social Studies	7	4.29	4.11	.00	11.00
Post Social Studies	7	4.29	3.30	.00	8.00
Pre Science	7	3.00	3.96	.00	10.00
Post Science	7	3.00	3.51	.00	8.00

Results of Data Analyses

Research questions one and two. To determine if any statistically significant differences in the grades, achievement scores, or state testing scores existed between each grade cluster, a One-Way ANOVA was computed. A factorial ANOVA test was conducted to determine if statistically significant differences existed because of the grade clusters and not gender, district, or qualifying criteria.

ANOVA.

Grades. The results, displayed in Table 12, showed that there are statistically significant differences for math grades (n=109), social studies grades (n=106), and science grades (n=106). However, homogeneity of variance was violated for the science, social studies, and English, so the results should be interpreted with caution.

Table 12
One-Way ANOVA of Grades

		Sum of Squares	df	Mean Square	F	Sig.
Math Grade	Between Groups	134.17	3	44.72	3.31	.023
	Within Groups	1420.60	105	13.53		
	Total	1554.77	108			
English Grade	Between Groups	8.01	3	2.67	0.18	.913
	Within Groups	1582.99	104	15.22		
	Total	1591.00	107			
Social Studies Grade	Between Groups	121.41	3	40.47	3.32	.023
	Within Groups	1244.67	102	12.20		
	Total	1366.09	105			
Science Grade	Between Groups	102.35	3	34.12	3.30	.023
	Within Groups	1053.24	102	10.33		
	Total	1155.56	105			

The One-Way ANOVA also compared each of the data points by grade cluster to determine if there were statistically significant differences between groups. Bonferroni's Post Hoc test showed that there were statistically significant for the late elementary (n=26) and high school (social studies n=27 and science n=28) clusters for both social studies and science grades (see Table 13).

Table 13

Bonferroni's Post Hoc test of Grades by Cluster

Dependent Variable	(I) Grade	(J) Grade	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Social Studies Grade	k-2	3-5	0.13	1.41	1.00	-3.67	3.93
		6-8	2.03	1.34	.800	-1.58	5.63
		9-12	2.77	1.41	.310	-1.02	6.55
	3-5	k-2	-0.13	1.41	1.00	-3.93	3.67
		6-8	1.89	0.86	.180	-0.42	4.21
		9-12	2.63*	0.96	.043	0.05	5.22
	6-8	k-2	-2.03	1.34	.800	-5.63	1.58
		3-5	-1.89	0.86	.180	-4.21	0.42
		9-12	0.74	-.85	1.00	-1.55	3.03
	9-12	k-2	-2.77	1.41	.310	-6.55	1.06
		3-5	-2.63*	0.96	.043	-5.22	-0.05
		6-8	-0.74	0.85	1.00	-3.03	1.55
Science Grade	k-2	3-5	0.34	1.30	1.00	-3.16	3.83
		6-8	1.69	1.24	1.00	-1.63	5.02
		9-12	2.80	1.29	.191	-0.66	6.27
	3-5	k-2	-0.34	1.23	1.00	-3.83	3.16
		5-8	1.36	0.79	.545	-0.78	3.50
		9-12	2.47*	0.88	.035	0.11	4.82
	6-8	k-2	-1.69	1.24	1.00	-5.02	1.63
		3-5	-1.36	.79	.545	-3.50	0.78
		9-12	1.11	.78	.936	-0.98	3.20
	9-12	k-2	-2.80	1.29	.191	-6.27	0.66
		3-5	-2.47*	0.88	.035	-4.82	-0.11
		6-8	-1.11	0.78	.936	-3.20	0.98

*. The mean difference is significant at the 0.05 level.

Achievement scores. The One-Way ANOVA, shown in Table 14, showed that there were statistically significant differences for math achievement scores (n=.84). However, homogeneity of variance was again violated. Therefore, the findings should be interpreted with caution.

Table 14

One-Way ANOVA of Achievement Scores

		Sum of Squares	df	Mean Square	F	Sig.
Math Achievement	Between Groups	3110.46	3	1036.82	4.74	.004
	Within Groups	17495.29	80	218.69		
	Total	20605.75	83			
Reading Achievement	Between Groups	134.351	3	44.784	.131	.942
	Within Groups	27393.97	80	342.425		
	Total	27528.32	83			
Writing Achievement	Between Groups	696.21	3	232.072	.664	.577
	Within Groups	22714.42	65	349.453		
	Total	23410.64	68			

The One-Way ANOVA also compared the achievement test scores by grade cluster to see if there were statistically significant differences by grade level. The results of Bonferroni's Post Hoc test showed statistically significant results for math achievement scores between the early elementary cluster (n= 6)and the high school cluster (n=23) (see Table 15).

Table 15

Bonferroni's Post Hoc test of Achievement Scores by Cluster

Dependent Variable	(I) Grade	(J) Grade	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Math Achievement	k-2	3-5	13.67	6.81	.286	-4.73	32.12
		6-8	16.33	6.56	.089	-1.42	34.09
		9-12	24.03*	6.78	.004	5.69	42.37
	3-5	k-2	-13.70	6.81	.286	-32.12	4.73
		6-8	2.64	4.07	1.000	-8.38	13.65
		9-12	10.33	4.41	.130	-1.60	22.26
	6-8	k-2	-16.33	6.56	.089	-34.09	1.42
		3-5	-2.64	4.07	1.000	-13.65	8.38
		9-12	7.70	4.02	.354	-3.17	18.56
	9-12	k-2	-24.03*	6.78	.004	-42.37	-5.69
		3-5	-10.33	4.41	.130	-22.26	1.60
		6-8	-7.70	4.02	.354	-18.56	3.17

*. The mean difference is significant at the 0.05 level.

MEAP testing. The One-Way ANOVA was also carried out on the MEAP scores. No test section was statistically significant (see Table 16). Bonferroni's Post Hoc test could not be carried out due to multiple grade clusters having less than two scores. Once again homogeneity of variance was violated so the results should be interpreted with caution.

Table 16

One-Way ANOVA of MEAP Scores

		Sum of Squares	df	Mean Square	F	Sig.
Math MEAP	Between Groups	1.65	2	.83	1.57	.217
	Within Groups	28.38	54	.53		
	Total	30.034	56			
Reading MEAP	Between Groups	.66	2	.33	.53	.595
	Within Groups	32.17	51	.66		
	Total	32.83	53			
Science MEAP	Between Groups	.01	1	.01	.02	.896
	Within Groups	4.85	12	.40		
	Total	4.86	13			
Social Studies MEAP	Between Groups	.67	2	.33	1.50	.262
	Within Groups	2.67	12	.22		
	Total	3.33	14			
Writing MEAP	Between Groups	.17	2	.09	.21	.812
	Within Groups	7.03	17	.41		
	Total	7.20	19			

Factorial ANOVA. Two factorial ANOVAs were computed to determine if the dependent variables, grades, achievement scores, and MEAP scores, were caused by the grade level clusters or by the other independent factors, gender, district, and qualifying criteria. The first factorial ANOVA was a 2x3x5. It determined if there were any significant interactions between gender, district, and qualifying criteria. The results, displayed in Table 17, showed a significant interaction between gender and behavior for English grades, gender and physical symptoms for social studies grades, gender and district for reading achievement, and gender, physical symptoms, and unhappiness for writing achievement. The second was a set of factorial

ANOVAs, a 4x2, 4x3, and 4x5, to determine if any significant interactions occurred between grade level cluster, gender, district, and qualifying criteria. This resulted in the following significant interactions: gender and grade level for English and science grades; grade level and other behaviors for English grades; grade level, interpersonal relationships and unhappiness for reading achievement; and grade level, physical symptoms, and unhappiness for reading achievement (see Table 17). Homogeneity of variance was not violated with the exception of the grade level and other behaviors interaction for English grades.

Table 17

Factorial ANOVA

Dependent Variable	Independent Variable	Type III Sum of Squares	df	Mean Square	F	Sig
English Grade	Gender x Behavior	83.99	1	83.99	6.56	.013
English Grade	Gender x Grade Level	98.27	2	49.14	3.34	.039
English Grade	Grade Level x Other Behaviors	122.80	3	40.93	3.10	.032
Social Studies Grade	Gender x Physical Symptoms	90.38	1	90.38	7.38	.009
Science Grade	Gender x Grade Level	73.13	2	36.57	3.71	.031
Reading Achievement	Gender x District	1194.48	1	1194.48	4.37	.041
Reading Achievement	Grade x Interpersonal Relationships x Unhappiness	1126.13	1	1126.13	5.21	.027
Reading Achievement	Grade x Physical Symptoms x Unhappiness	3916.46	3	1305.49	6.04	.001
Writing Achievement	Gender x Physical Symptoms x Unhappiness	2667.67	3	889.22	2.92	.048

Research Question Three

A paired samples *t*-test was conducted to see if there was a statistically significant difference in grades from pre-BIP implementation to post-BIP implementation. The results are displayed in Table 18. The test shows that no statistically significant difference existed for any of the academic subjects from pre-implementation to post-implementation.

Table 18

Pre to Post Implementation Grades t-Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre Math Grade - Post Math Grade	-0.88	1.89	0.67	-2.45	.70	-1.31	7	.231
Pair 2	Pre English Grade - Post English Grade	.50	4.41	1.56	-3.19	4.19	0.32	7	.758
Pair 3	Pre Social Studies Grade - Post Social Studies Grade	0.00	4.16	1.57	-3.85	3.85	0.00	6	1.000
Pair 4	Pre Science Grade - Post Science Grade	0.00	1.00	0.38	-0.92	0.92	.00	6	1.000

Summary

This chapter has described the sample comprised of students with EI. In addition, it detailed the statistical tests conducted and summarized the results from each test. Each statistical test was conducted to answer the three research questions. The One-Way ANOVA, computed to answer research questions one and two, showed that there were statistical differences between grade clusters for math grades, science grades, social studies grades, and math achievement scores. Conversely, the paired samples *t*-test that compared the pre and post BIP implementation grades of students with EI showed no statistical differences between the two data points.

Chapter five will provide the context necessary to interpret the results of the statistical tests. It will discuss the results and draw conclusions based on the statistical analyses. Most important, it will make recommendations that may help improve the behavioral and academic functioning and outcomes of students with EI. Furthermore, it will explain the limitations of the study, which will help the reader better understand and interpret the results, conclusions, and recommendations.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

The poor academic functioning and post-secondary outcomes that exist for students with emotional impairments (EI) provided the motivation for this study. Research studies and meta-analyses have frequently documented the current dismal state of students with EI. Many other studies have extensively researched various programs to reduce interfering behaviors in students with EI. These analyses explain the very crux of the issue at hand. Most interventions aimed at students with EI focus on anger management and coping skills but occur outside of school in individual or group therapy settings. Little research has been conducted on students with EI in the school setting. Of the studies that have occurred, the majority of them deal with behavior; very few examine academic interventions for students with EI. Most importantly, the studies report out aggregated data, providing few suggestions as to when the academic decline starts for students with EI. The pertinent question remains to be answered: when should academic interventions and remediation begin for students with EI?

Research Questions

Three research questions framed the design of the study. All three questions focused around the topic of academic achievement instead of behavior for students with EI. Unlike other studies, this one examines academic achievement in the absence of behaviors instead of academic achievement as a result of a behaviors or a decline in behaviors. Additionally, this study used multiple objective academic data points instead of subjective engagement rates. Although a clear bidirectional relationship between academics and behaviors exists, they must be examined separately to identify the point where they interact with each other and begin to have a negative reciprocal effect.

Research questions one and two.

One: At what grade level cluster (early elementary, late elementary, middle school, or high school) do students with EI have a breakdown in their core academic abilities?

Two: At what point in their academic career should students with EI receive intense academic interventions and remediation to prevent school failure and increase basic grade-level core academic skills?

Grades. The results of the One-Way ANOVA show that statistically significant differences existed between grade clusters for math grades, science grades, and social studies grades. The results showed that the mean for each subject was approximately five or a C (math=5.05, English=4.5, social studies=4.64, science=4.85). These results concur with the research of Bradley et al. (2004) who state that approximately 50% of students with EI receive the grade of C. Further analysis using Bonferroni's Post Hoc test showed that for science and social studies grades, there was a statistically significant difference between the late elementary cluster (3-5) and the high school cluster (9-12). This finding, supported by Reid et al. (2004), asserts that as students progress through higher grade levels, their academic grades decline. Surprisingly, there was no statistically significant difference for English grades. Despite this, close analysis of the means for each grade cluster puts the academic decline issue in context. Figures 2, 3, and 4 show the mean for each grade cluster and subject. For math, science, and social studies, the means of the grade clusters fall drastically between the late elementary (3-5) and middle school (6-8) grade clusters. Visual analyses of the charts show that between the late elementary and middle school grade clusters, subject grades fall below the average grade of C (indicated by the black line on the horizontal axis at grid line 5). The charts indicate that academic interventions need to occur during the late elementary grade cluster. Interventions and

remediation at that point could possibly prevent grades from falling before students with EI enter middle school.

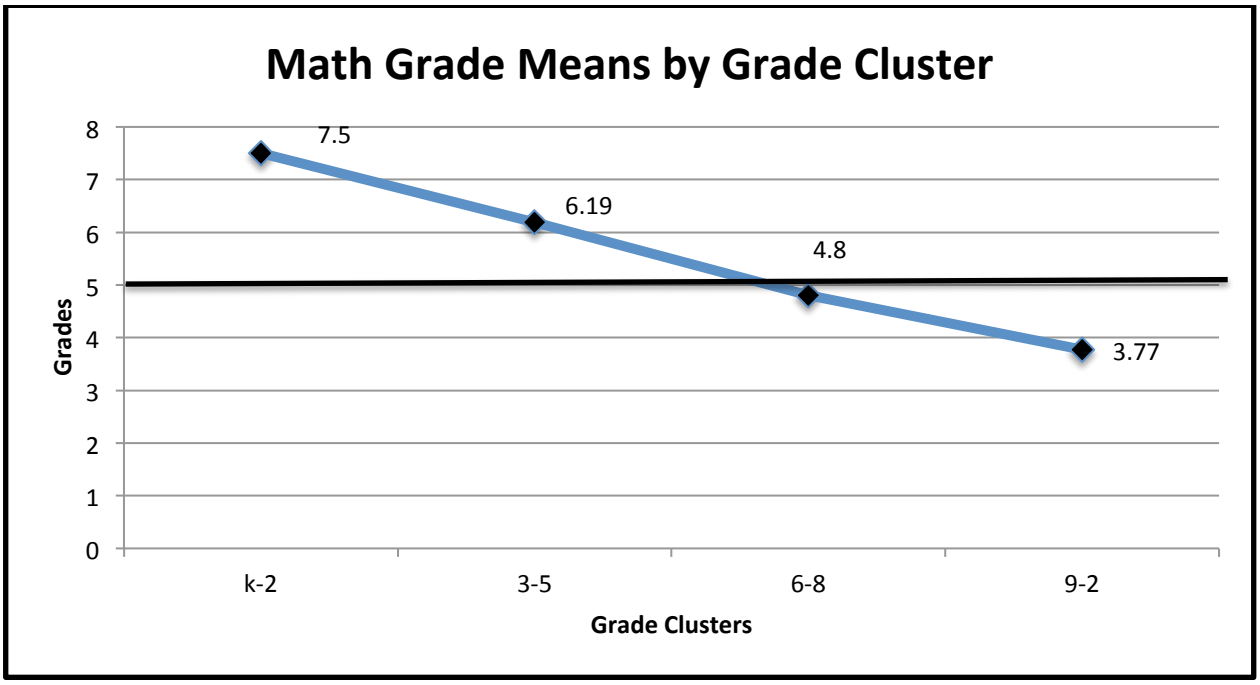


Figure 2: Math Grade Means by Grade Cluster

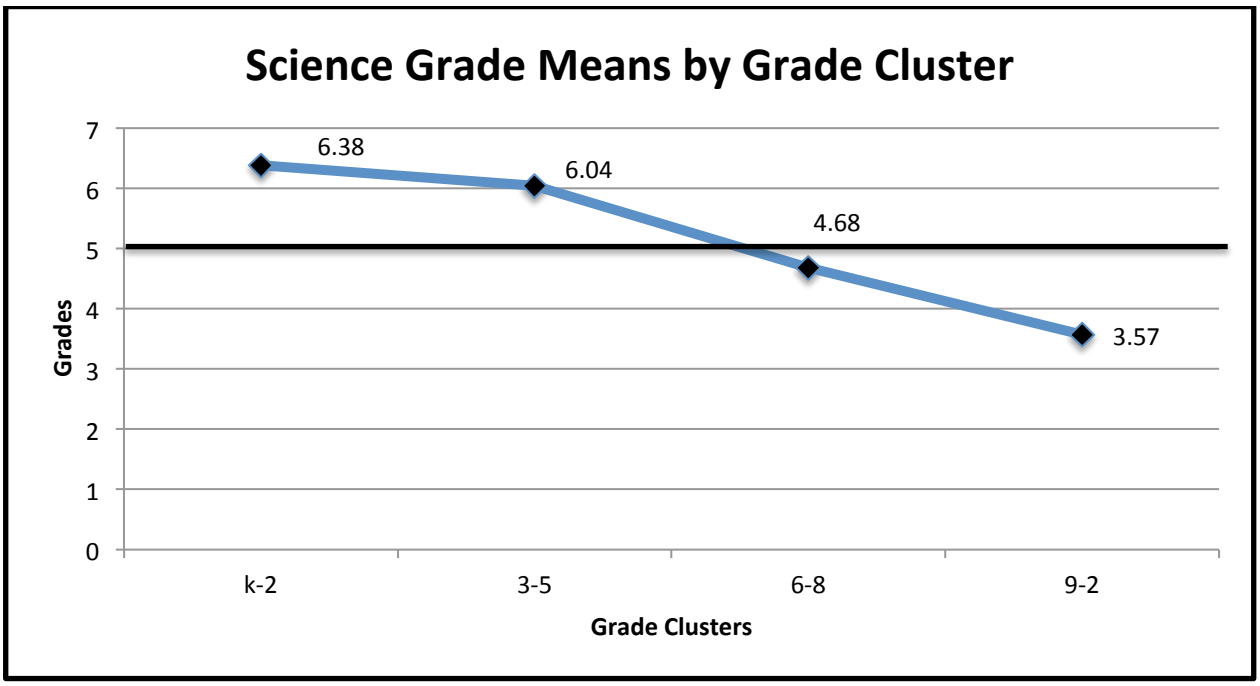


Figure 3: Science Grade Means by Grade Cluster

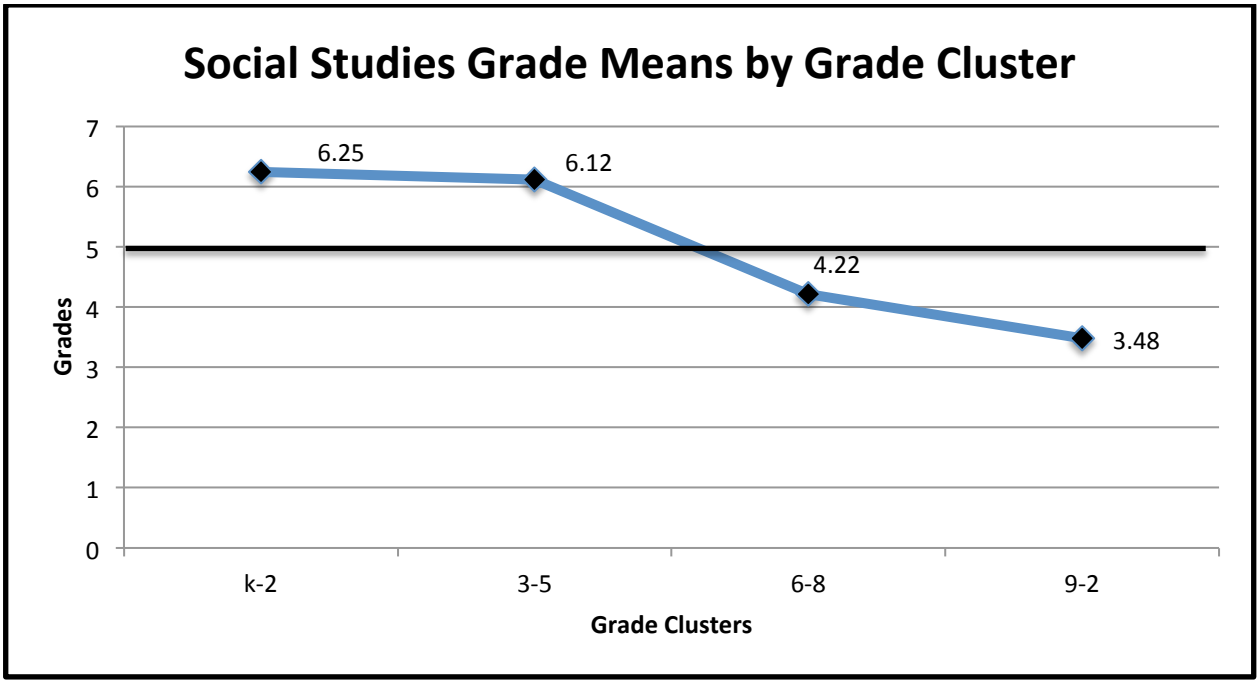


Figure 4: Social Studies Grade Means by Grade Cluster

Achievement scores. The One-Way ANOVA computed a statistically significant difference for math achievement scores. This analysis coincides with previous research studies, as 90% of students with EI fall below grade level on the math section of the Woodcock-Johnson III (Lane et al., 2006), and 43% fall below the 25th percentile (Wagner et al., 2005). Conversely, the One-Way ANOVA did not find statistically significant differences for English or writing despite findings in previous research. Lane et al. (2006) reports that 60% of students with EI fall below grade level on the reading section of the Woodcock-Johnson III, and Wagner et al. (2005) state that 61% fall below the 25th percentile. Bonferonni's Post Hoc test showed that there was a statistically significant difference between the early elementary grade clusters (k-2) and the high school grade cluster (9-12). Again, analysis of the means of the grade clusters provides information in regards to the point at which interventions should occur (see Figure 5). Between the middle school cluster (6-8) and the high school cluster (9-12) math achievement scores fall below the 85th percentile. The 85th percentile is one standard deviation below the mean norm, marking the point where students start to fall below grade level. The data from the Post Hoc test and the visual analysis of the chart shows that interventions should occur during the middle school grade cluster.

The results from the analysis of achievement scores point to a different point of intervention than the analysis of grades. One possible explanation for this is the number in each analyzed sample. The number of grades analyzed ranged from 106 to 109; however, the number of achievement grades analyzed ranged from 69 to 84. According to the mean data, student grades do not start declining until late elementary. Once this happens teachers would then conduct academic achievement testing to determine a student's present level of functioning (achievement testing is not required to determine initial eligibility). Therefore, more students

who struggle academically would have achievement testing done in the middle school cluster than the late elementary cluster. A second reason that there is a discrepancy in the sample numbers for the clusters, resulting in a difference in when grades and achievement scores begin to decline, is due to timing. Grades are reported multiple times a year so they reflect current, real-time academic levels. Academic achievement testing is typically completed once every three years when the law states a student has to be evaluated to redetermine eligibility. Therefore, if a student was found eligible in early elementary school (k-2) and had testing done, they may not be tested again until the middle school grade cluster (6-8). This makes it likely that fewer students are tested in the late elementary cluster (3-5) than the other grade level clusters.

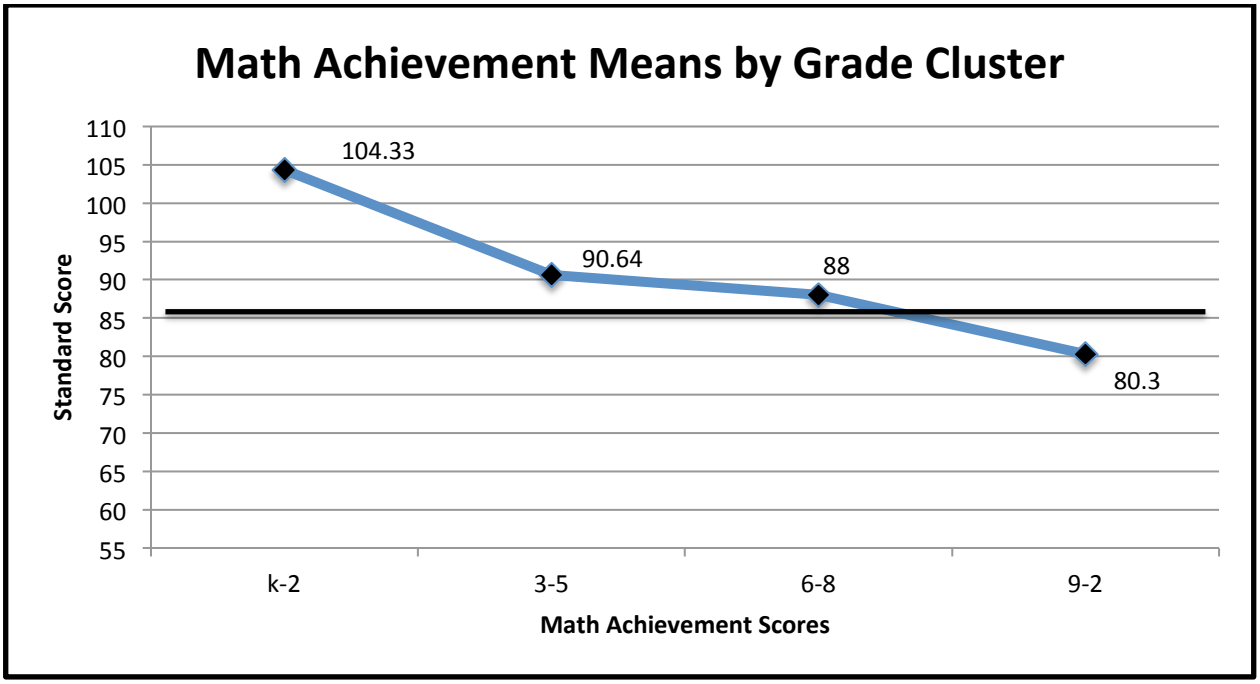


Figure 5: Math Achievement Scores by Grade Cluster

MEAP scores. The One-Way ANOVA found no statistically significant differences for any of the subject areas. Bonferonni's Post Hoc test was unable to be carried out because some grade clusters had fewer than two scores. This finding is not surprising. The most likely reason that no significant differences were found is because none exist. Analysis of the means of each

grade cluster in Figure 6 shows little difference. One alternate reason there were no significant findings includes the design of MEAP. Students in grades 3-8 get tested on varying subjects. Each grade does not get tested on the same subjects, making comparisons across grade clusters difficult. Additionally, students take multiple versions of the state test. The majority of students take MEAP; however up to 1% of the most impaired students can take MIAccess, and 2% of the students who would not be successful on the MEAP are assigned to take MEAP Access. The data warehouse that provided the records review during data collection did not make a distinction as to which version of the MEAP each student took. Thus, it is impossible to know which versions of the test are being compared. Comparison of different versions of the test likely happened, making the comparison invalid.

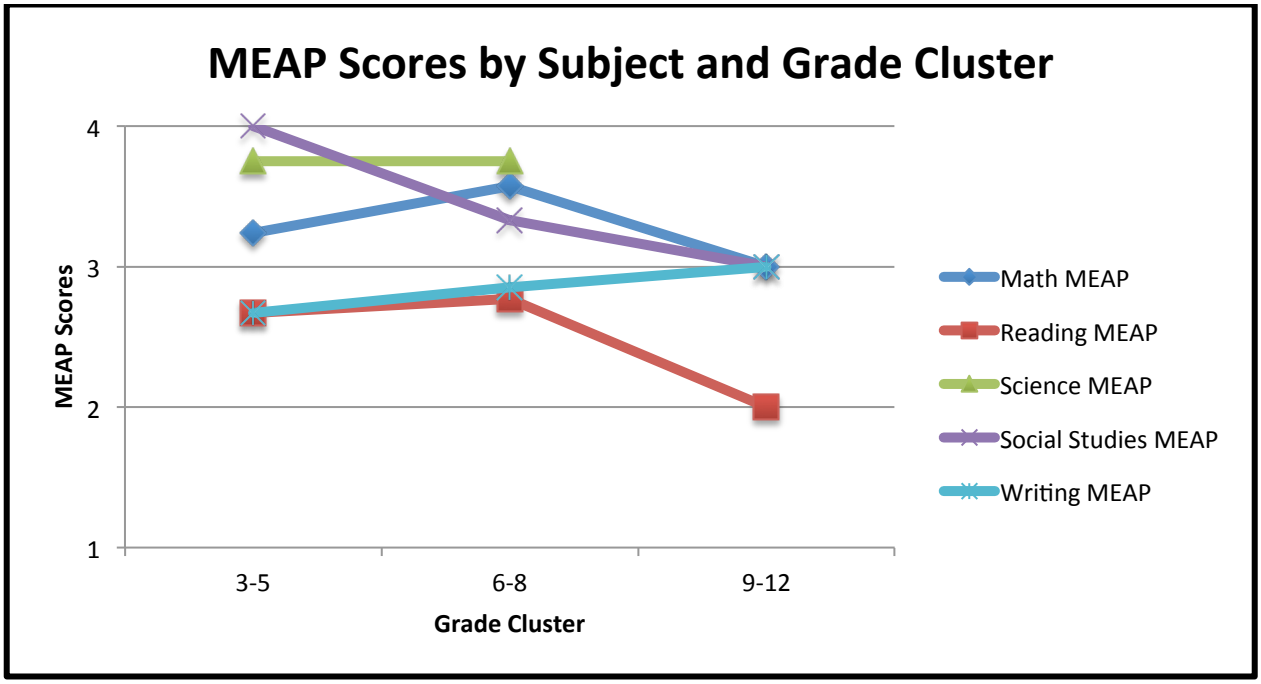


Figure 6: MEAP Scores by Subject and Grade Cluster

Unlike grades and achievement scores, no statistically significant differences were found for MEAP scores. This is not unexpected. Many students care about their grades. They have the opportunity to get support and help from parents and special education teachers. Students often

put forth a concerted effort during achievement testing because they want to be seen as smart and "normal." Additionally, achievement testing takes place in a one-on-one setting, with a familiar teacher, in a low-pressure environment. State standardized tests, however, have far different circumstances than both grades and achievement testing. Students have difficulty seeing the personal value in standardized tests, especially as students progress through grade levels. The environment is often different from the normal routine, and it is an environment of high-pressure. This leads to behavior problems for students with externalizing behaviors; students often complete the test as quickly as possible with minimal effort, or their behavior results in students being dismissed from testing. Students with internalizing behaviors have a spike in anxiety. They too often complete the test as quickly as possible to alleviate their anxiety or skip testing altogether. Of the three data points, the MEAP gives the least accurate description of the students; therefore, it should be given the least value when analyzing the data and interpreting the results.

Research question three.

Does a reduction in problem behaviors, brought about by the implementation of a BIP, increase academic performance as evidenced by grades?

The paired samples *t*-test resulted in no statistically significant differences between pre and post BIP implementation grades for any of the subject areas. Figure 7 shows the pre and post implementation grade means for each subject area. Visual analysis of the chart shows that pre and post implementation means do not differ greatly. This result is expected despite the prevailing theory that academics will automatically increase once behaviors decrease. The paired samples *t*-test demonstrates that is illogical to assume that academics will have a spontaneous increase in the absence of academic interventions. Wehby, Lane, and Falk (2003) state that

behaviors have to be under control before students and teachers can focus on academics. Conversely, Gable, Hendrickson, Tonelson, and VanAcker (2002) state that behavior and academic problems should both be viewed as errors in learning and addressed at the same time. This analysis supports this assertion that academic interventions must be implemented even if behaviors are still occurring.

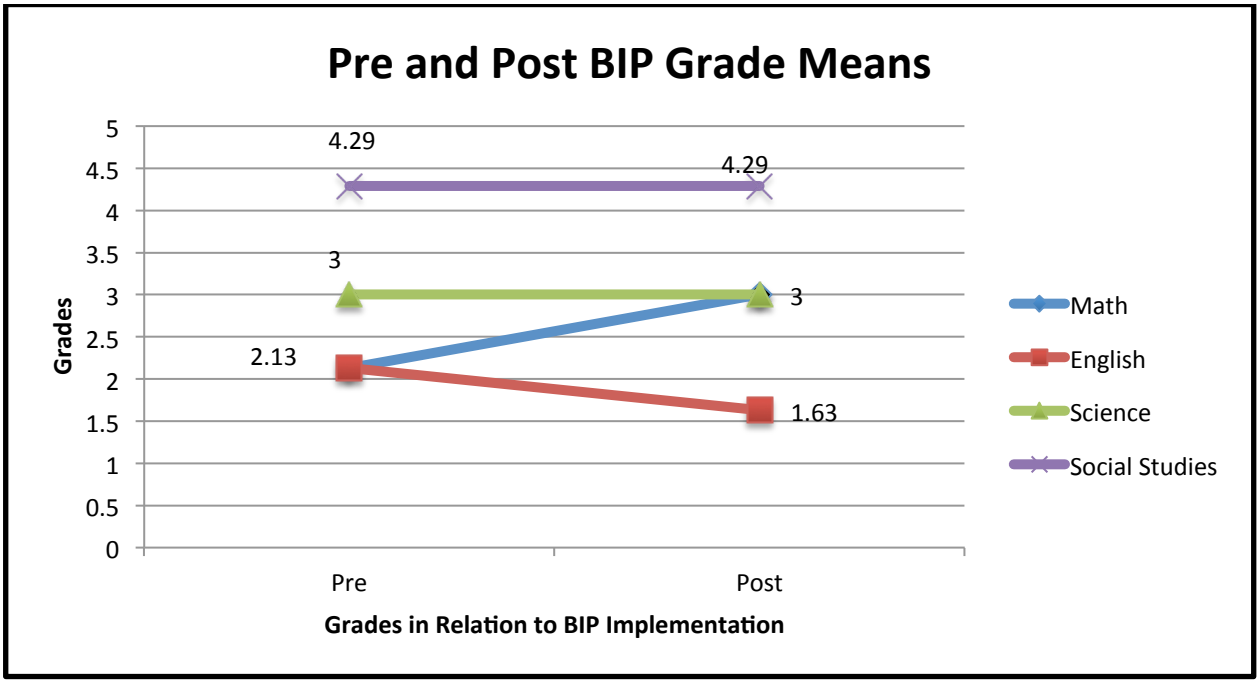


Figure 7: Pre and Post BIP Implementation Grade Means by Subject Area

Academic interventions are necessary because many students, due to interfering behaviors, have not mastered the basic skills needed to improve their academic achievement. Since many of these basic skills build one another, students simply cannot "pick up where they left off" once their behaviors decrease. The analyses of research questions one and two suggest the point at which interventions should be implemented. The larger sample used for research questions one and two showed that interventions should occur during the late elementary grade cluster (3-5). Interventions and remediation typically occur in smaller settings, and therefore may

be able to accommodate the interfering behaviors so students can master the basic skills needed to succeed academically.

Limitations

Despite the statistical analyses that convincingly answer all three research questions, the study design does lend itself to some limitations. The major limitation deals with sample size. The population of students with EI is small. In the United States in 2011-2012, approximately 6.5 million students were eligible for special education services, but only 373,000 (5.7%) were eligible under the EI category nationwide (U.S. Department of Education). During the 2014-2015 school year when this study was conducted, 206,203 students in Michigan were eligible for special education services (Michigan Department of Education, 2015). Of those, only 11,550, or 5.6% of the special education population, were eligible under the EI category (Michigan Department of Education, 2015). This, in turn, creates a small sample size. This poses two problems with research design. First, a small sample cannot create a high confidence interval due to a small margin of error.

A second major limitation is that the research study did not include random probability sampling. If a research study cannot be carried out using random probability sampling, the results cannot be generalized to the population as a whole. Therefore, while the results of the study may hold true for the sample, it may not extend to the entire population of students with EI.

A third limitation is that research question three had a sample that consisted only of students who exhibited externalizing behaviors. The students analyzed had a BIP that targeted either aggression or noncompliance. The results showed that the implementation of a BIP did not

have an effect on grades. This may not hold true for a student who experiences internalizing behaviors such as depression or anxiety.

A fourth limitation deals with lack of data in regards to research question three. Although the paired samples *t*-test showed that no differences existed between pre and post BIP implementation grades, vital information was missing to interpret those results. Unfortunately, the law does not require schools to keep data on the target behavior identified in the BIP. The assumption during analysis was that the BIP reduced the target behavior for each student who made up the sample. However, no records exist that show whether the BIP truly decreased the target behavior. Without this information, it is not possible to determine if this analysis proves or disproves the theory that a decrease in behavior will increase academic achievement. Therefore, the results need to be interpreted with some caution.

The last limitation is the violation of homogeneity of variance. Homogeneity of variance was violated for some of the statistical tests that yielded significant differences. These results in turn have to be viewed and interpreted with caution; the statistically significant differences may not be the results of the independent variable being analyzed (grade cluster levels), but may occur due to differences in the participants who make up the sample.

Conclusions

The research study and following statistical analyses resulted in two major discoveries. First, the One-Way ANOVA found statistically significant differences for math, science, and social studies grades and math achievement scores. Bonferroni's Post Hoc test showed that there were statistically significant differences between the late elementary (3-5) and high school (9-12) grade clusters for social studies and science grades; significant differences between the early elementary (k-2) and high school (9-12) grade clusters were found for math achievement scores.

Analyses of the means of each grade cluster suggest that interventions and remediation should occur during the late elementary grade cluster.

The results of the analysis designed to answer research question three showed that no statistically significant differences exist for grades prior to and after implementation of a BIP. This contradicts the prevailing theory that students' academic achievement will increase as a collateral result of a decrease in interfering behaviors. The results suggest that behaviors do in fact interfere with the students' ability to master the skills necessary to be academically successful. It also contradicts current research, which implies that academics cannot be a focus while interfering behaviors are occurring. Conversely, academic interventions and remediation need to occur simultaneously to prevent the interfering behaviors from impeding academic success.

The results redefine the bidirectional relationship between academics and behaviors. Figure 8 shows a revised theory on the bidirectional relationship between academics and behaviors, where they no longer interact directly with each other, but have a mediating factor, interventions and remediation, that also influence each other. Since many students with EI have below grade level academic skills, academic demands precede their interfering behaviors (Wehby et al., 2003). In turn, the behaviors prevent students from gaining academic skills. In this model, academic interventions and remediation will build up the students' skills, reducing frustration and the behavior problems that follow academic demands. With a reduction in behaviors, students will no longer have a barrier that interferes from gaining academic skills.

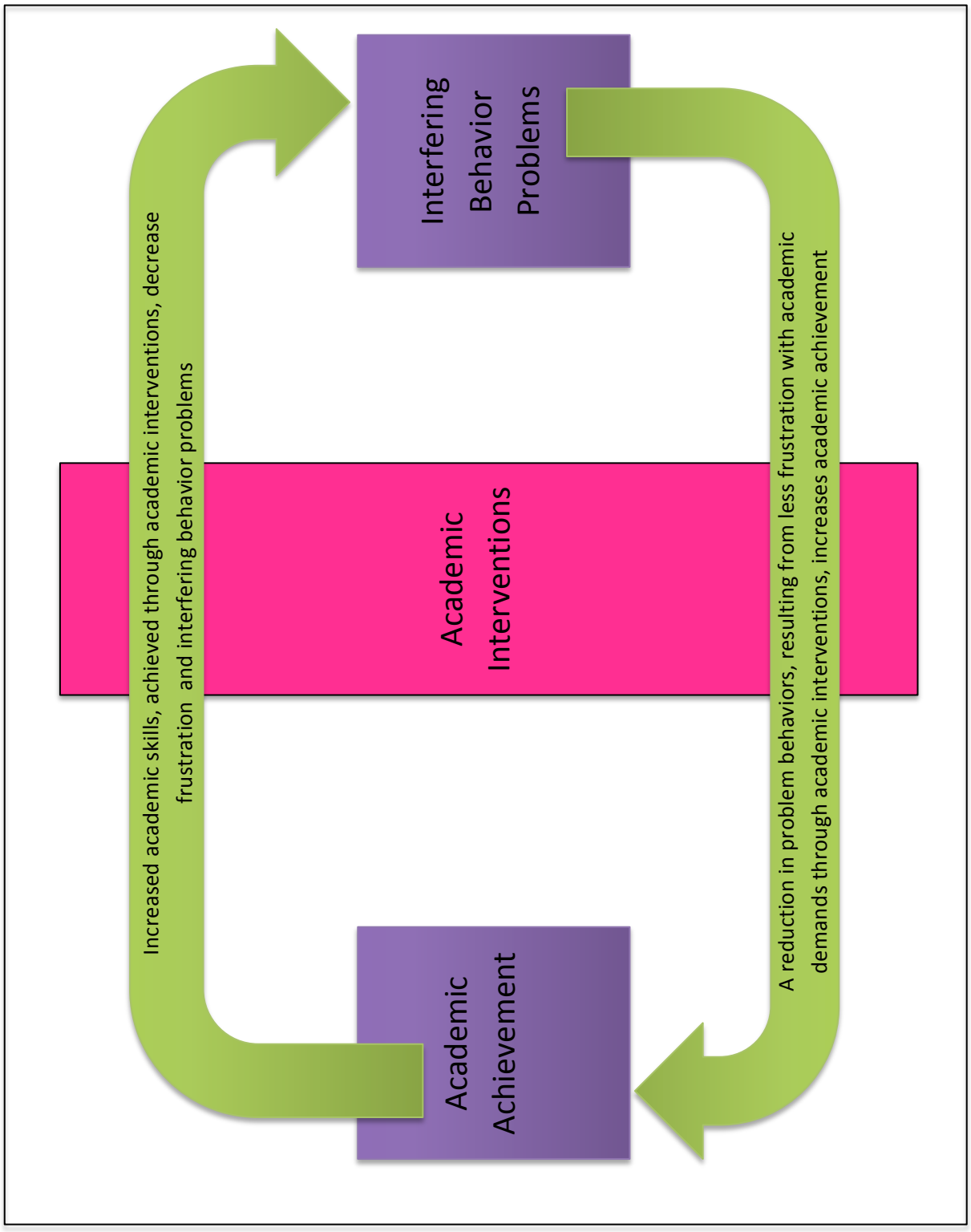


Figure 8: Revised Theory on Bidirectional Relationship for Students with EI

Suggestions for Further Research

The dismal academic outcomes of students with EI stress the need for research to continue. Between 1975 and 2004 only 55 studies were conducted on students with EI; prior to 2000 only eight studies researched the academic achievement of students with EI (Nelson et al., 2004). While it is unlikely that one specific or even multiple etiologies of emotional impairments will ever be determined, research holds the power to improve the lives of these students. The design, analyses, results, and limitations of this study highlight the need for further studies that research the link between students with EI and their academic achievement.

Future researchers should design a mixed qualitative and quantitative longitudinal study. This design would eliminate many of the limitations of this current study. A longitudinal design would take a sample of students with EI and follow them over time. This would allow the researcher to compare progress of the same students over time instead of comparing a snapshot of different students at the same point in time.

This study should be conducted on a larger basis. Repeating the study across one state or many states would allow a large sample size. Random probability sampling could occur if the sample size was large enough to have an experimental and control group while meeting the size requirements. This would create a high interval of confidence, giving validity to the implications of the results. Most importantly, experiment designs with random probability sample result in outcomes that can be generalized to the whole population.

Using a mixed quantitative and qualitative design can account for the data that many current research studies lack. Studies that examine the effect of a BIP record a baseline frequency of behaviors and then the frequency after the BIP has been implemented to determine if behaviors decrease. Studies that examine academic progress measure it by documenting the

time a student is on task or engaged. These studies need to be combined to determine the effect a BIP has on academic achievement while using multiple data points similar to the ones collected in the current study. An analysis of special education services, such as a resource room or frequency of visits to a social worker, would be valuable data needed to further understand academic status of students who display internalizing behaviors, as often their behaviors do not result in a BIP.

A longitudinal study would help eliminate violations of homogeneity of variance. Comparing the same group of students against themselves results in less difference between the subjects that comprise the sample. This makes it more likely that any statistically significant differences could be attributed to the independent variable, grade cluster levels, and not to differences among the subjects in the sample.

The most important research studies that need to occur will examine different academic intervention programs to see which is the most effective for students with EI. The poor academic status and post-secondary outcomes for students with EI are well documented, but a paucity of research currently exists that suggests how to ameliorate this. Researching and concluding which programs are the most appropriate for students with EI at every grade or grade level cluster is the first step in reversing the current negative status.

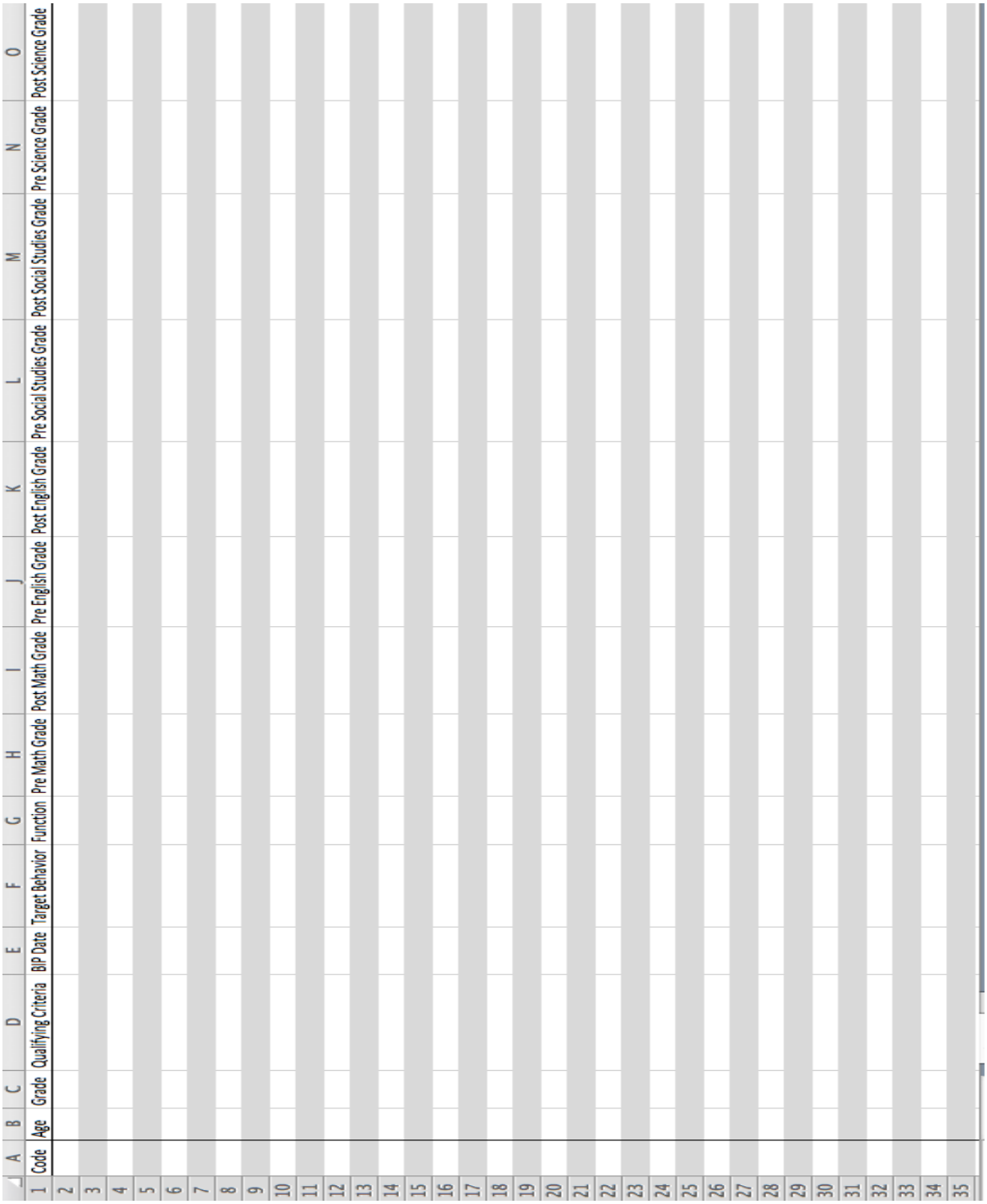
The current research study has provided a sound beginning for the types of studies that need to be conducted to improve the academic functioning of students with EI. It is clear from the results of the statistical analyses that schools need to implement academic interventions early even if interfering behaviors are still occurring. Further research needs to be conducted to verify the outcomes of the current study, as it is imperative to determine the point at which students with EI begin to struggle academically. After determining the precise point where most students

with EI begin to struggle, research can focus on the types of interventions that are most effective. Only then can schools start to reverse the poor academic and post-secondary outcomes of students with EI.

With the suggested future research outcomes, educators, researchers, and parents of students with EI can hope to change the focus of research from "Where do students with EI begin to struggle academically and what can we do to resolve it?" to "What can the improvement in the academic status of students with EI be attributed to?"

APPENDIX A

DATA COLLECTION SPREADSHEETS



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Code	Age	Grade	Qualifying Criteria	Grade-math	Grade-English	Grade - Social Studies	Grade-Science	Achievement-Math	Achievement-Reading	Achievement-Writing	MEAP math	MEAP Reading	MEAP Science	MEAP Social studies	MEAP Writing
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ABSTRACT

THE RELATIONSHIP BETWEEN THE BEHAVIORS OF STUDENTS WITH AN EMOTIONAL IMPAIRMENT AND THE BEGINNING OF ACADEMIC DECLINE OR SUCCESS

by

THERESA WALKER

December 2015

Advisor: Dr. Marshall Zumberg

Major: Special Education

Degree: Doctor of Philosophy

The poor academic and post-secondary outcomes for students with EI have been well documented for decades. Few studies exist, however, that explore where the breakdown in academics begins. Instead of compiling data that adds to this knowledge base, this study explored the academic status of students through multiple data sources. The goal of this was to determine at which level, early elementary, late elementary, middle school, or high school, a breakdown in academics can be detected and at which level interventions should occur. It also attempted to answer the question as to whether or not special education services, specifically a BIP, do indeed achieve their goals and increase academic achievement. One hundred thirteen students eligible for special educations services under the emotionally impaired category comprised the sample to research the first two questions and eight students, also eligible under the emotionally impaired category, made up the sample for the last question. Statistical analyses for the first two questions showed statistically significant differences for grades and achievement

scores between the early elementary (k-2) and high school (9-12) clusters and the late elementary (3-5) and high school (9-12) clusters. Analysis of the means for each data point shows that interventions should occur during the late elementary grade cluster. Analysis of the data points for question three showed no statistically significant differences in pre-BIP to pot-BIP implementation grades. These results indicate that the prevailing theory about the interaction between academic achievement and interfering behaviors should be revised. A new theory should include the effect academics and interfering behaviors have on one another through a mediating factor, academic interventions.

AUTOBIOGRAPHICAL STATEMENT

Theresa Walker received her B.S. in Special Education from Boston University in 2000. She also received her M.Ed. from Boston University in 2005. At Wayne State University she majored in Special Education, concentrating in Emotional Impairments, with a cognate in Clinical Psychology. Along with her education she holds a State of Michigan Teaching Certificate in grades Pre K – 12 with endorsements in Emotional Impairments, Learning Disabilities, and Early Childhood Education. Additionally, she is Highly Qualified in English.

Dr. Walker currently works as a special education teacher for Lakeview Public Schools. She fills various roles at the high school. She teaches the tier three reading intervention class. She also co-teaches the sophomore, junior, and senior level English classes. Dr. Walker has a caseload of twenty students and holds responsibility for writing and conducting IEPs, ensuring compliance with accommodations, scheduling, and acting as an advocate for the students. Additionally, she has the title of Accommodations Coordinator. She is responsible for requesting, coordinating, and giving state testing accommodations for the high school students with disabilities.

Dr. Walker presented at the Massachusetts Association for 766 Approved Private Schools (MAAPS). Her presentation provided a detailed guide on how to turn IEP goals into evidence for the Massachusetts Comprehensive Assessment System (MCAS) alternative testing portfolios. In the spring of 2014 Dr. Walker taught Effective Instructional Strategies for Exceptional Learners at Wayne State University.