Academic Achievement of Students in Special Education in a Socially Inclusive School

Capstone Project

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By

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**Abstract**

The purpose of this study was to investigate the extent to which students with disabilities achieved academic growth in a school setting that emphasizes the importance of all students becoming full members of the classroom and school communities. The participants were 22 students who were students in the school's Special Education program for at least four years. As its basis for assessing academic growth, the study examined the reading and mathematics percentile rankings of Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) assessments conducted in the students' first and last years of enrollment in the school's Special Education program. The study found that nearly all students showed percentile growth in both reading and mathematics assessments, that the growth was independent of gender or the number of years in the school's Special Education program, and that students achieved, on average, higher than 50th percentile results on nationally-normed assessments of reading and mathematics.

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**Chapter One**

**Introduction**

"*We hold these truths to be self-evident: that all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of happiness*." During the hundreds of years since these words of Thomas Jefferson were introduced in The Declaration of Independence, America has been engaged in a process of exploring, defining, and living into their meaning. Struggles for women's right to vote and civil rights for minorities are among the more visible examples of our country's efforts to establish laws and practices that help establish equality and secure unalienable rights for its citizens. Beginning in the 1970's, these efforts included litigation and subsequent iterations of legislation that established the right to a "Free, Appropriate Public Education" (FAPE) in the "Least Restrictive Environment" (LRE) for children with disabilities.

Writing nearly 25 years ago, Dr. James Kauffman expressed many of the goals that still unite those who work on behalf of students with disabilities:

> Nearly all advocates for students with disabilities want effective instruction in academic and social skills, appropriate education in the least restrictive environment, public education that accommodates students with special problems, labels that carry the least possible social stigma, parental participation in decisions to provide special services, and collaboration among all service providers. (Kauffman, 1993, p. 6)

Yet our current state of affairs prompted one team of researchers to begin their article by reporting "…this little noticed but important and uncontestable fact: Many students with disabilities are performing abysmally in America's schools." (Fuchs, Fuchs, & Vaughn, 2014, p.13) It is apparent that establishing equal rights and developing the systems that ensure those rights manifest themselves effectively in society are two different things.

**Purpose of the Study**

This study investigated the extent to which students with disabilities achieve academic growth in a school setting that emphasizes not only the academic success of all learners, but the social and emotional development of children and the importance of all students becoming full members of the classroom and school communities. Specifically, it examined the growth in reading and mathematics of students who had an Individualized Education Plan (IEP) for four or more years. It also examined the relationship between growth and the number of years in Special Education and differences in growth for both students with different disabilities and students of different genders.

**Background and Significance of the Study**

Improving the academic achievement of student with disabilities has become a critical goal for public schools. [Federal laws] require that students with disabilities be held to the same standards as students without disabilities with regard to participating in statewide assessment and making adequate yearly progress toward proficiency in reading and mathematics. (Ju, Zhang, & Katsiyannis, 2012, p.4)

While the goals of educating students with disabilities may be clear, how to achieve them is not. "With the additional requirement that students with disabilities participate in and perform respectably on statewide assessments and accountability procedures, pressures to favor one kind of placement (e.g. inclusion in the general education classroom) over any other (e.g. providing pull-out services in some other place) mounted" (Zigmond, 2003, p. 194).

The debate over the appropriate educational placement for students in Special Education has often been conflated with debates of social equity, not just educational rights:

> The term social inclusion is typically used to refer to the goal of bringing about an inclusive society, one in which all individuals are valued and have important roles to play. Social inclusion in education refers to the inclusion in mainstream schools of children with a wide diversity of differences and needs. (Hornby, 2015, p. 238)

Before recommending or implementing educational practices, however, it is important to assess their effectiveness in meeting the goals and mandates of legislation intended to benefit students with disabilities. In this regard, the inability to separate the social and educational aspects of inclusion has become an impediment to those developing the policies and practices of public education in various settings. The lack of solid evidence has been chronic:

> Research on the effects of inclusion on the various U.S. student populations is limited. (Daniel & King, 1997, p. 69)
>
> *Six years later:*

Research evidence on the relative efficacy of one special education service

delivery model over another is scarce, methodologically flawed, and

inconclusive. (Zigmond, 2003, p. 194)

*Seven years later:*

To sum up, earlier research gives some clues about the effects of inclusive

education, but the results are too inconsistent to draw unequivocal conclusions.

(Ruijs et al., 2010, p. 3)

*And recently:*

Inclusive education of children with special educational needs is becoming more

popular, but the effectiveness of educating these children in this environment

has not yet been proved, mainly because there has been a lack of empirical

investigation. (Hornby, 2011, as cited in Sukys et al., 2015, p.327)

This study sought evidence regarding the ability of students with disabilities to learn

effectively in a setting that maintains an emphasis on social inclusion of all students.

**Setting**

The data in this study come from a small, rural charter school serving

approximately 70 – 100 students in kindergarten through eighth grade over the period

reviewed (2005 – 2016).  The student population was predominantly white and

averaged between 20-30% in Special Education (over twice the state average) and 35-

45 % eligible for Free and Reduced Lunch (just above the state average).

**Assumptions and Scope of the Study**

Cook and Schirmer proposed that at least three criteria must be met for Special

Education to be considered truly special:

(a) instructional techniques have been developed that have been shown to be

effective for students with disabilities; (b) those effective practices are unique to

special education; in other words, the techniques cannot be performed as well or

as frequently in the absence of special education; and (c) the effective practice

are implemented frequently and with fidelity. (2003, p.200)

This study assumes that Special Education practices in the subject setting met

the criteria above and were provided in service of the Individualized Education Plans

(IEPs) of the students whose data was reviewed. The study examined the results of

Northwest Evaluation Association's Measures of Academic Progress (MAP)

assessments conducted in the students' first and last years of enrollment in the school's

Special Education program. These assessments have been judged as having high

technical quality for measuring student growth over time and comparing students to

national norms (Militello et al., 2010, pp. 47-48). However, inferences regarding

student performance on other assessments should not be made based on MAP results.

Also, only mathematics and reading assessments were used, so extrapolation of results

to other subject areas is not valid. The selection of students assumed that long-term

changes in student performance were more likely to be meaningful, so only students

who had been in the school's Special Education program for at least four years were

included. The narrow selection criteria limited the number of subjects (n=22), so

generalizing the results to larger populations should be done with caution.

**Summary**

Understanding the effectiveness of particular practices is essential to those

responsible for recommending, approving, or implementing an educational program.

Given the disparate views over the creation of more inclusive settings for students in

Special Education and the dearth of information regarding the academic achievement of

the affected students, this study seeks to make a relevant contribution to the debate.

**Chapter Two**

**Literature Review**

In reviewing literature applicable to a study of academic achievement of students in Special Education in inclusive settings, it seemed important to build an understanding of the contextual framework that makes such an effort relevant. As a result, this review is divided into four sections that address the following themes: the requirement and challenge of educating students with disabilities, the key role that defining disability plays in framing educational decisions, the debate over inclusive settings for students in Special Education, and the importance of implementing effective practices in the education of these students.

**Requirements and Challenges of Special Education**

The federal government's entrance into education on behalf of students with disabilities in what has become known as the IDEA (Individuals with Disabilities Education Act) created a new set of requirements for schools, which had previously operated exclusively under state and local guidelines. Using the incentive of additional federal funds, the IDEA defines eligible disabilities and requires schools to provide a "Free, Appropriate Public Education" (FAPE) in the 'Least Restrictive Environment' (LRE) in accordance with an "Individualized Education Plan" (IEP) to all students who qualify" (Nepo, 2017, p. 207). The challenges that flowed from these changes rippled well beyond Special Education to include all aspects of public schools.

> Special education has big problems, not the least of which is that it must
> redefine its relationship with general education. Now is the time for leadership
> that recognizes the need for change; appreciates the importance of consensus

building; looks at general education with a sense of what is possible; respects

special educations traditions and values and the law that undergirds them; and

seeks to strengthen the mainstream, as well as other educational options that can

provide more intensive services, to enhance the learning and lives of all

children. (Fuchs & Fuchs, 1994, p. 305)

Yet, the results of public education's significant integration efforts remain

unclear:

One of the most discussed but least analyzed issues in education today is Special

Education. Although a disproportionate amount of school funding goes to the

education of handicapped children…extraordinarily little evidence has

accumulated about the effectiveness of Special Education programs in raising

achievement (Hanushek et al., 2002, p. 584)

The level of academic achievement relative to the investment in Special Education also

remains an issue. "Not only are the special education outcomes dismal, but the amount

of money that educators have put forth to support these failing efforts is staggering"

(Frattura & Capper, 2006, p.356). These and other frustrations have made Special

Education a target for reform. "Critics [of Special Education] cite issues related to

specialized treatment of students with disabilities – such as segregation, labeling,

funding, and more recently manifestation determination – as reasons that Special

Education should be radically altered or dismantled" (Cook et al., 2003, p.347).

**Understanding of "Disability" Drives Program Goals and Strategies**

Divisions over the goals and corresponding strategies of reform efforts can be

traced back to differences in the fundamental understanding of what disability is and

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how a society – including its education system – needs to accommodate its citizens. "In many countries, provision of Special Education services relies on a mix of classification schemes that are still predominantly underpinned by a medical model of disability and the concept of discrete categories. These schemes may be classification systems oriented on:

- Clinical categories (such as different types of syndromes),

- Educational categories (such as different types of special educational needs, which may or may not overlap with clinical categories), or

- Administrative categories (such as different types of schools, interventions, or levels of funding)" (Florian et al., 2006, pp. 43-44).

And yet others see disability as rooted in socially-constructed norms and the approach to serving all students as reflecting,

> the capacity for sociologies of disability and education to reveal interventions for increasing the options for a range of identities and differences in schools. The central argument embedded within this discussion accepts a view of inclusive education as a recognition of schooling as a site for cultural politics where disabled students are not the objects of assimilation. Inclusive schooling for disabled students embodies the challenge of expressing the full range of human variation in school cultures which are mediated through curriculum, pedagogy, and school organization. (Slee, 1997, p.409)

> This presents "[t]wo competing views of disability: "disability as an intra-individual phenomenon…a defect owned by the individual" and "disability…as a social construction based on outdated assumptions about difference" (Andrews et al., 2000, p.

259).  From an education philosophy point of view, "[those of] the modern, Enlightenment tradition who take the norms of science, objectivity, and reason as universal, [come] into conflict with "postmodern" literary theorists, who assume all such norms to be inventions of particular groups that are then imposed on others" (Bredo, 2002, p. 263).

These differences support conflicting perspectives on Special Education's purpose: "changing the individual through the development and validation of innovative interventions for enhancing performance" or "changing the social constructions that unnecessarily limit individuals who are thought to have disabilities" (Andrews et al., 2000, p. 259).  In developing an approach to addressing this conflict, it is important to acknowledge that "…disability is rather a problematic category for scientific and educational purposes because it constitutes a very abstract, general concept.   The basic problem with the term *disability* is that it covers a huge range of impairments or disabling conditions – *disability* encompasses extreme heterogeneity of type and severity (Kauffman, 2008, as cited in Anastasiou & Kauffman, 2012).  Also, "[r]ecognition of the dual nature of disability – that disabilities are neither purely social nor purely a matter of impairment – is critical. (Anastasiou, et al., 2016, p.5).  For those who see the complexity and dual nature of disability and who are seeking to integrate the valid and relevant aspects of both perspectives, the challenge arises within the tension between recognizing differences in terms of educational need and the responsibility to educate all children.  They must consider "learning difficulties as emerging from the relationship between the individual child and the schooling system. …by substantially conceptualizing the relational aspect of disability both to impairment

and to schooling factors… by rethinking disability and learning difficulties themselves through the concepts of functionings and capability, and with the framework entailed by these concepts in their contextualisation in education" (Terzi, 2005, p. 454)  As a result of pressures from both within and outside education, schools have been moving more students from traditional Special Education settings and creating programs that are more inclusive, where students with disabilities are taught more often in General Education classrooms with their same age peers and their Special Education supports and services provided alongside the standard grade level curriculum (McLeskey et al., 2012).

**Debate Over Inclusive Settings for Students with Disabilities**

Inclusive education is generally considered to be a multi-dimensional concept that includes the celebration and valuing of difference and diversity, consideration of human rights, social justice, and equity issues, as well as of a social model of disability and a socio-political model of education. (Hornby, 2015, p. 235)

As with earlier changes, inclusive education has effects beyond the boundaries of Special Education.  "The responsibilities of general education teachers related to students with disabilities in inclusionary settings include the design and implementation of curricula, specifically, in accordance with the IEP that was developed by the IEP team" (Jones, 2012, p.298).

And once again, the effectiveness of these changes is unclear.

There appears, however, to be deep uncertainty about how to create inclusive environments within schools and about how to teach inclusively.  …  Whilst we continue to be ignorant about the features of *good* inclusion, we are assailed

with advice about *effective* inclusion, all of which is appallingly meaningless

and likely to entrench the sense of failure among teachers. (Allan, 2008, p.10)

In light of the potential consequences of changes in educational programming to

schools, teachers, and especially students, understanding the impact of a shift toward

inclusive education is important. The increasing rejection of traditional Special

Education practices - including pull-out services, alternate placements, and specialized

curricula – has led at least one prominent voice to issue a warning:

I suspect that our thinking about Special Education is often skewed by private

agendas and personal experiences.  We just might fail to recognize a good thing,

like happiness or progress, when we see it.  We *could* be in danger of throwing

away through carelessness or ignorance something that we say we are seeking.

(Kauffman, 2008, p.133)

**Effective Practices Essential in Working with Students with Disabilities**

The reformation of Special Education, therefore, involves the rethinking of

General Education and the broader systems of our education environments, and

certainly go beyond the location where students in Special Education are placed.

The push and pull between individualization and uniform expectations is

overwhelming and can only be remedied through changes in how we

conceptualize student learning and academic needs and training, in order to

improve how we address the diversity of these learning needs. (Castro-Villarreal

& Nichols, 2016, p.18)

"To create schools for all students involves an ongoing collective examination of values

and practices that construct centers and peripheries so that no student and family is left

on the margins" (Waitoller & Pazey, 2016, p. 19). Certainly a core value for schools is the academic achievement of all students, and their efforts to serve this value need to incorporate those practices which are effective in facilitating this result.

> [This] translates into considering the extent to which people have opportunities to achieve fundamental educational outcomes. The insight of the capability approach is that people should have the same extent of opportunities to achieve fundamental functioning, like being able to read and to write, or to concentrate and accomplish tasks, or to reflect critically on one's own actions. (Terzi, 2007, p.762)

To provide this opportunity to students in Special Education, means collaboration on instruction and support as well as providing specialized services.

> One point of view is that special educators must work with general educators because most students with disabilities are now included for at least part of the school day in General Education classrooms. This point of view has legitimacy, in that Special Education is a service, not a place, and special educators must serve students with disabilities regardless where they are placed in a school. (Kauffman, 2015, p. 12.)

**Summary**

As education decision-makers explore organizational structures, student placements, staffing levels, curriculum, and other aspects of school operations, they need to have reliable information and solid understandings at their disposal. Whether they are effective in meeting their responsibilities to provide a FAPE in the LRE for students in Special Education is not determined solely by where services are provided,

what their view of disability is, or the extent to which they establish inclusive classrooms.

> Neither location nor exposure is synonymous with access…only evidence of adequate student outcomes demonstrates that access to the curriculum has been accomplished.  All this argues for a definition of access to the general educational curriculum that is based on empirical evidence of adequate learning – regardless of the setting in which or the instructional methods by which that learning is achieved. (Fuchs et al., 2015, p.154)

> It is in the service of this goal – providing empirical evidence of adequate learning – that this study was undertaken.

**Chapter Three**

**Methodology**

With the goal of gathering empirical evidence of adequate learning by students in Special Education in a socially inclusive setting, this study focused on measures of the subjects' academic achievement. This chapter presents the research design, followed by a description of the setting and participants. Next are the academic measures used and the data collection and analysis process applied to them.

**Research Design**

This study had a non-experimental, quantitative design. It examined changes in percentile rankings of nationally-normed standardized assessments of reading and mathematics. Comparisons were made within subjects to identify differences in reading growth and mathematics growth. Comparisons were also made between subjects to identify differences in reading growth and mathematics growth by disability category and by gender. Analyses to identify correlations between the number of years in the program and growth were also done.

**Setting and Participants**

The subjects in this study were students in a small charter school that enrolled students in kindergarten through eighth grade and that emphasized the social and emotional development of children in addition to academics. Special Education students were included as full members of their classroom communities and received many of their Special Education interventions and supports within the classroom. Subjects were selected for the study based solely on the basis of having been in the school's Special Education program for at least four years. The subject students were

not identified and no student who met the criteria was excluded.  The four-year criteria did result in a relatively small subject group (n=22) which may limit the generalization of results; however, it was presumed that data representing long-term changes in student performance would be more meaningful in meeting the study's goal.

**Measures**

The study examined the results of Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) assessments conducted in the students' first and last years of enrollment in the school's Special Education program.  MAP tests are computerized adaptive assessments that are aligned to specific state content standards by assembling pools of items that address state content standards. Test algorithms survey the pools within goal or strand areas to assure domain coverage (Wang et al., 2013, p. 92).  A recent investigative study used a multiple-indicator, latent-growth modelling (MLGM) approach to examine the longitudinal achievement construct and its invariance for the MAP tests in reading and mathematics for grades 3 - 9. The results of the analyses from ten states suggest that with repeated measures, the construct of both MAP reading and mathematics assessments remained consistent at different time points. The findings support the achievement construct's invariance throughout different grades or time points and provide empirical evidence for measuring student growth (Wang et al., 2013a, p.383).   While these assessments have been judged as having high technical quality for measuring student growth over time and comparing students to national norms (Militello et al., 2010, pp. 47-48), inferences regarding student performance on other assessments should not be made based on MAP results.

**Data Gathering and Analysis**

The study data were reported, analyzed, and presented without information that would allow unique individuals to be identified. This resulted in the study being fully exempt from IRB requirements, as provided under institutional guidelines and federal policy (i.e. 45 CFR 46.101(b)(4): Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if *the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects* [emphasis added]).

The data included the subject's gender, disability type, and race, as well as the number of years in the school's Special Education program. The MAP percentile rankings in both reading and mathematics for each subject's first and last years in the program were also obtained and formed the basis for assessing their academic achievement. For demographic data, descriptive statistics such as mean, standard deviation, and percentage were used. For group comparisons, t-tests were used, including the paired-sample t-test for a within-subject variable and the independent t-test for a between-group variable. When the assumption of normal distribution was not met due to a small sample size (e.g. in the analysis of results by gender), non-parametric Mann-Whitney U was used instead of the independent t-test.

**Summary**

The relatively straightforward design of the study and the requisite data made collection and analysis straightforward as well. Considering the nature of the study's

goal, the intention in this regard was to avoid complications that could potentially undermine or cloud the results.

**Chapter Four**

**Results**

This chapter provides a review and discussion of the study's results. It contains an overview of the subjects' demographic information, tables and descriptions of the results of each analysis, and a brief discussion of the overall findings.

This study was conducted in part due to a general lack of empirical data regarding the academic achievement of students with disabilities in inclusive settings, with the goal of establishing data in this regard by measuring and analyzing achievement and growth on reading and mathematics assessments of subject students. Selection criteria resulted in 22 children whose data were used. Of these, 21 (95.5%) showed percentile growth in reading and 19 (86.4%) showed percentile growth in mathematics (Note: 2 of the 3 students who did not show growth in mathematics had high initial percentiles - average 83, standard deviation 11 – and comparable ending percentiles – average 79, standard deviation 9). Ending percentiles for the subject students averaged 72.5 (28.2) in reading and 57.6 (21.8) in mathematics. Further analysis of the participants and results provides insights beyond these initial findings.

**Participant Characteristics**

Table 1 presents participants' major demographic characteristics. The subjects were predominantly male (81.8%, with 18.2% female) and white (86.4%, with 4.5% Hispanic and 9.1% not disclosed). With regard to their qualifying disability, nearly half (45.5%) were identified with a Specific Learning Disability (SLD). The other disability categories represented in the population were Emotional/Behavioral Disorders (EBD - 27.3%), Autism Spectrum Disorder (ASD – 13.6%), and Other Health Impaired (OHI –

13.6%).  The students number of years in Special Education at the school ranged from 4

to 7, with a mean of 5.05 and a standard deviation of 1.05.  An equal number of students

were in the program for 4 years and 5 years, with these groups representing 72.8% of

the total.

Table 1
*Participants Characteristics*

| Variable | n | % |
|---|---|---|
| Gender | | |
| Male | 18 | 81.8 |
| Female | 4 | 18.2 |
| Race | | |
| White, non-Hispanic | 19 | 86.4 |
| Hispanic | 1 | 4.5 |
| No Responses | 2 | 9.1 |
| Disability | | |
| Autism Spectrum Disorder (ASD) | 3 | 13.6 |
| Emotional Behavioral Disorder (EBD) | 6 | 27.3 |
| Other Helath Impairment (OHI) | 3 | 13.6 |
| Specific Learning Disability (SLD) | 10 | 45.5 |
| No of Years in IEP (Mean 5.05; Standard Deviation 1.05) | | |
| 4 | 8 | 36.4 |
| 5 | 8 | 36.4 |
| 6 | 3 | 13.6 |
| 7 | 3 | 13.6 |

*Note*. N=22.

**Reading and Mathematics Growth by Disability**

Table 2 displays the growth in reading and mathematics for the whole group and

by disability category. Mean (with standard deviations in parentheses) of reading

growth, 23.00 (15.83), was higher than mean of mathematics growth, 17.91 (20.58), but

this difference was not statistically significant at the specified .05 level, paired $t(21) =$

0.86, $p = .402$. The sample sizes of four disability groups were very small to be

compared with the analysis of variance (ANOVA), so the disability categories were

reorganized to comprise only two groups: SLD (n=10) and Others (combining three

categories: ASD, EBD, and OHI, n=12). Table 3 shows the two-group comparison. The

SLD group demonstrated statistically higher growth in mathematics than did the Others,

29.30 (24.66) vs. 8.42 (9.75), t(20) = 2.52, p = 0.028, but was not statistically different

in reading growth, 24.80 (15.63) vs. 21.50 (16.52), t(20) = 0.48, p = 0.638.

Table 2
*Growth in Reading and Mathematics by Disability Category and Total*

|  | Variable | n | Mean | SD |
|---|---|---|---|---|
| Reading | Autism Spectrum Disorder (ASD) | 3 | 15.67 | 5.86 |
|  | Emotional Behavioral Disorder (EBD) | 6 | 25.33 | 23.10 |
|  | Other Helath Impairment (OHI) | 3 | 19.67 | 5.77 |
|  | Specific Learning Disability (SLD) | 10 | 24.80 | 15.63 |
|  | Total | 22 | 23.00 | 15.83 |
|  |  |  |  |  |
| Mathematics | Autism Spectrum Disorder (ASD) | 3 | 13.00 | 4.36 |
|  | Emotional Behavioral Disorder (EBD) | 6 | 3.83 | 8.45 |
|  | Other Helath Impairment (OHI) | 3 | 13.00 | 14.11 |
|  | Specific Learning Disability (SLD) | 10 | 29.30 | 24.66 |
|  | Total | 22 | 17.91 | 20.58 |
|  |  |  |  |  |
|  | Paired-samples $t$ (21) = 0.86, $p$ =.402 |  |  |  |

Table 3
*Growth in Reading and Mathematics by Two Disability Groups*

|  | Variable | n | Mean | SD | *t(20)* | *p* |
|---|---|---|---|---|---|---|
| Reading |  |  |  |  | 0.48 | 0.638 |
|  | Specific Learning Disability (SLD) | 10 | 24.80 | 15.63 |  |  |
|  | Others (ASD + EBD + OHI) | 12 | 21.50 | 16.52 |  |  |
|  |  |  |  |  |  |  |
| Mathematics |  |  |  |  | 2.52 | 0.028 |
|  | Specific Learning Disability (SLD) | 10 | 29.30 | 24.66 |  |  |
|  | Others (ASD + EBD + OHI) | 12 | 8.42 | 9.75 |  |  |

Based on the significant difference in mathematics growth, data for the two groups was

examined further and it was noted that the SLD group had a lower average initial

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percentile of 29.70 (24.22) when compared to the average initial percentile of the Others: 48.00 (21.62) and that they averaged ending percentiles of 59.00 (23.53) compared to an average ending percentile of 56.42 (20.09) for the Others.

**Reading and Mathematics Growth by Gender**

Due to not meeting normal distribution assumptions because of a small sample size, the comparisons by gender used the Mann-Whiteney U test as a non-parametric alternative test to the independent sample t-test. In this comparison, the male group was lower in reading than the female group, 21.06 (15.11) vs. 31.75 (18.30) and higher in mathematics, 19.28 (22.03) vs. 11.75 (12.45), but these differences were not significant (Mann-Whitney U significance for reading = 0.227, and mathematics = 0.594).

Table 4
*Growth in Reading and Mathematics by Two Gender Groups*

| Variable | n | Mean | SD | *Mann-Whitney U Test Sig.* |
|---|---|---|---|---|
| Reading | | | | 0.227 |
|     Male | 18 | 21.06 | 15.11 | |
|     Female | 4 | 31.75 | 18.30 | |
| | | | | |
| Mathematics | | | | 0.594 |
|     Male | 18 | 19.28 | 22.03 | |
|     Female | 4 | 11.75 | 12.45 | |

**Relation between Years in Special Education and Growth**

Table 5 displays the Pearson correlation between the years in Special Education and growth. Neither the correlation with reading growth, $r = -.029$, $p = .899$; nor with mathematics growth, $r = .184$, $p = .413$, were significant.

Table 5

*Correlations between Years in IEP and Growth in Reading and Mathematice*

| Variable | | Growth in Reading | Growth in Mathematics |
|---|---|---|---|
| Years in IEP | Pearson Correlation | -0.029 | 0.184 |
| | Sig. (2-tailed) | 0.899 | 0.413 |
| | N | 22 | 22 |

**Chapter Five**

**Discussion and Implications**

**Discussion**

Regardless of the setting within which services are offered, students in Special Education are entitled to a high-quality education that meets not only the legal requirements, but the moral obligations and social imperatives to which schools are accountable. The shift to provide settings that are more socially inclusive in both charter schools and traditional districts challenges some of the historical aspects of Special Education. The need to ensure this movement is more than feel-good social engineering requires that educational decision-makers, including legislators, agencies, school boards, and administrators have solid evidence to support the policies and programs they are advancing. This study was intended to help addresses the call for more research establishing a relationship between the amount of time students in Special Education were in the General Education classroom and improved student outcomes (McLeskey et al., 2012) by investigating whether standardized assessment data for a population of students in Special Education who were served predominantly in an inclusive setting could demonstrate that "adequate learning" had occurred.

The study found that nearly all students showed percentile growth in both reading and mathematics assessments, that the growth was independent of gender or the number of years in the school's Special Education program, and that students achieved, on average, higher than 50th percentile results on nationally-normed assessments of reading and mathematics. This would seem to be a step in trying to disentangle the important rights to Special Education and those tied – at least rhetorically – to inclusive

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education (Kauffman & Badar, 2013). At a minimum, all programs serving students in Special Education need to be able to demonstrate the continued effectiveness of Special Education in raising achievement (Hanushek, et al., 2002). For those who see current educational policies, cultures, and practices actively placing students with disabilities at a greater risk of educational and social exclusion (Slee, 2014), these results would seem to offer hope that a movement toward settings that emphasize social inclusion does not have to sacrifice academic achievement.

**Limitations and Recommendations for Future Research**

"The goals of inclusive education are twofold: for students with disabilities to be full members of their schools and classroom groups, and for these students to make appropriate progress toward achieving academic and functional competence" (Janney & Snell, 2006, p.215). Schools pursuing these goals need to consider more than just the amount of time students spend in the General Education classroom. While this study indicates that shifting to socially inclusive settings does not preclude academic achievement by students in Special Education, it did not look at the specific instructional interventions provided, just the setting and outcomes, and therefore does not make the case that inclusive settings are always effective in delivering the intensive, high-quality instruction which has been shown to have a significant impact on learning (McLeskey & Waldron, 2011). Nor did it look at student perceptions of the belonging and connectedness which are important aspects of differentiation between settings that seek to be inclusive and those striving to increase student access to the General Education curriculum (Cosier et al., 2013). Therefore, no claims about the school's effectiveness in achieving social inclusion can be made.

These limitations would serve well as starting points for additional research investigating what conditions and/or practices are effective in helping students with disabilities in inclusive settings achieve academic success and/or feelings of belonging. Many efforts to transfer effective Special Education strategies to new settings or develop new instructional models do not yet have research-based evidence of success (Volonino & Zigmond, 2007) and need additional documentation of their effectiveness before they are embraced.

**Conclusion and Educational Implications**

In the decades since educational rights for students with disabilities were established, our education system has struggled with how to best deliver on the promise of a "Free, Appropriate Public Education" in the "Least Restrictive Environment". This struggle has played out against the backdrop of significant social, cultural, political, and economic fluctuation. For schools, establishing the settings, policies, and practices that serve students in Special Education is not only a legal responsibility, it helps shape the organizational culture. Amidst all the tradeoffs encountered in making these decisions, it may be reassuring that choosing between increased inclusion and academic achievement isn't one of them.

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