Mesosystem Variables and Schools' Learning Disabilities Prevalence Rates

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Dissertation submitted to the faculty of the Virginia Polytechnic Institution and State University in partial fulfillment of the requirements for the degree of

Doctor of Education in Educational Leadership and Policy Studies

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May 5, 2006
Falls Church, Virginia

Keywords: Mesosystem, LD Prevalence rate, Collective Efficacy, School Health

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ABSTRACT

Since the inception of the 1974 Education for all Handicapped Children legislation, the number of students referred and placed in special education has been steadily rising. The largest increase is in the learning disabilities category. With the reauthorization of the Individuals with Disabilities Education Improvement Act of 2004 and the federal requirements for schools under the No Child Left Behind law, schools are required to take a closer look at their rising special education numbers and identify alternative solutions for children's needs other than a certain placement in special education.

There are different levels of variables that influence a teacher's decision to refer a student to special education. This study aimed to understand the mesosystem school variables that influence this process. Using two scales, the Organizational Health Inventory for Elementary Schools (OHI-E) and the Collective Efficacy Scale (CE-Scale) this study used purposive sampling to survey ten elementary school faculties in a large suburban district in Virginia. LD prevalence rates were collected for all elementary schools in the district. Data was analyzed to answer the following questions:

(a) How does school organizational health correlate with the number of students referred to special education in a given school? (b) How does collective teacher efficacy correlate to the number of students referred for special education services?

The overall return rate for the survey was 87% with 490 teacher surveys completed. Teachers did not have many teaching years in their buildings. Teachers with twelve or more teaching years experience were more likely to refer students to special education.

Collective teacher efficacy scores were correlated to school health scores but not to LD prevalence rates. Higher institutional integrity was seen in smaller schools. Title I schools did not correlate with higher LD prevalence rates.

Two variables predicted referrals to special education; years teaching in combination with teacher efficacy resulted in greater referrals to special education.

The findings of this study may aid educational leaders in making sound changes within school environments to affect the school's LD prevalence rate, addressing particularly teacher efficacy and referral habits of more experienced teachers.

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ACKNOWLEDGEMENTS

There are several people I would like to thank for helping finish my dissertation. First and foremost I would like to thank Dr. Walt Mallory and Dr. David Alexander for serving as co-chairs. Your feedback and your questions saw me to the finish line. Another note of thanks to Dr. Byers who was always able to show me the practical side of research. A special thank you goes out to Dr. Alice Farling, Assistant Superintendent of Special Services in Fairfax County Public Schools. Your help and your guidance allowed me to really focus my questions and make some neat discoveries in my research. Thank you to Nancy Van Buren, for always getting the paperwork and my deadlines in order.

Without some folks, I would have never finished. A big thank you to Lauren Sheehy, my cohort partner and dear friend. Thanks for pushing me along and always being on my tail. I couldn't have done this program without you. To Peggy Goetz and Amie Mansfield, two BC folks who can actually make statistics come alive and make sense, a million thank yous! I cannot even begin to tell you how much you two taught me!

To my colleagues at Garfield Elementary School, thanks for rarely asking, "When are you going to be done?" A thank you to Mr. Bill Cushman, for being a very kind eye and ear as I worked my way through this process. Another thank you to the schools that volunteered to be part of my study, I couldn't have done it without them. And finally, thanks to my family. My mom who suffered a stroke in 2003 and who now happily resides with us, we had a very tough road these last few years through your recovery. You taught me strength and perseverance --- don't ever give up mom. To my sister

Sheila and her husband Tony, for spending weekends with mom so I could write. And lastly, to my husband Jim, who never made me do lawn work, remodeling, painting, or any other household chores so that I could finally finish. I did it.

CHAPTER ONE

Introduction

For nearly three decades, Congress has worked to address evaluation concerns in educating students with disabilities. In particular, this has been attempted through federal statutory language such as P.L. 105-17, the Individuals with Disabilities Education Act Amendments of 1997, and IDEA 2004. Various components of the law specifically address the identification and evaluation of students with suspected disabilities. The law requires a team of professionals to evaluate and determine appropriate interventions before placement of any child who was believed to need support beyond the scope of the general education classroom (Kauffman & Hallahan, 2005).

Today, almost one out of every seven students is receiving assistance for a disability (NCES 2003). While the 1974 Education for all Handicapped Children legislation and IDEA 2004 established guidelines for our current special education system, it is the classroom teacher's discretion that drives this process. Factors beyond the guidelines of the law can influence a teacher's decision to refer a student to special education and several factors in particular impact referrals to special education. Among these factors, a teacher's sense of self-efficacy has surfaced as the primary factor that affects a teacher's decision to refer a student to special education (Meijer & Foster, 1988). Teachers who believe that their teaching cannot influence student outcomes may be more likely to refer a difficult-to-teach student to special education. Conversely, teachers who have a greater belief in their ability to effect change may be more willing to retain a difficult to teach student in regular education and to rely on their own resourcefulness to overcome student difficulties (Gresham, 2002).

The ecological framework developed by Brofenbrenner (1977) identifies four environments that influence human behavior. This framework has been adapted in this study to investigate school climate and its influences on special education referral practices. The framework consists of four levels of environmental factors: the microsystem (teachers and students), mesosystem (schools and administration), exosystem (districts and society), and macrosystem (laws and policy).

The microsystem and the mesosystem appear to have the most significant impact on decision-making and, considering classroom teachers' strong influences on the initial decision to refer students to special education (Kornblau & Keogh, 1980), it is important to better understand how this influence affects the mesosystem. The proposed study surveyed teachers concerning collective staff efficacy and will investigate staff efficacy within school environments that may impact teachers' special education referral practices. Identifying factors that shape teachers' referral influences may enable educational leaders to better identify the support and training teachers require, as well as the needs and services that are necessary for student to be successful.

Need for the Study

Over the past twenty years, there has been consistent growth in the identification of children needing special education services, particularly in the area of learning disabilities. Thus, over 46% of all students now receiving support under IDEA are labeled learning disabled (NCES 2003) and educators are concerned that over-identification of students for special education services has become the norm (Scruggs & Mastropieri, 2002). With the flood of referrals, states and local districts have attempted to remedy the problem by instituting various pre-referral

interventions which have demonstrated limited success in reducing the rise in special education referrals

There appear to be common problems in the educational process that affect the success of curbing referrals to special education. In terms of over-identification, local districts have identified inconsistencies when qualifying students for special education and have reinterpreted special education policies to address instructional issues in general education (Scruggs & Mastropieri, 2002). Public school officials believe schools are identifying the right children for special education while researchers would argue that students qualifying for special education are those who are failing academically, not necessarily because of a disability. These researchers believe that special education is being used to remedy academic failures in general education (MacMillan, Gresham, & Bocian, 1998).

Once a classroom teacher has referred a student, the student has a 90% chance of being formally tested and, of those tested, 73% are found eligible for services in special education (Ysseldyke, 2001). Local implementation practices have resulted in students with diverse learning or behavioral needs qualifying, often inappropriately, for special education services (Scruggs & Mastropieri, 2002).

Concerns also exist regarding the over-representation of minority students in special education (Oswald, Coutinho, Best, & Singh, 1999). IDEA 2004 requires that states develop a specific system that tracks the number of minority students in special education and develop specific intervention programs to address over-representation in certain areas ("IDEA," 2004). Teacher self-efficacy as a factor in the identification process concerning special education students has been a topic of research in the hopes that the knowledge gained may influence the racial disproportionality now seen in special education classrooms (Oswald et al., 1999). Since

minority students are referred more often than non-minority students (NCES 2003), some researchers suggest that teachers feel less effective with minority students. Bias as a factor in decisions made by referring teachers has also been investigated in research (Podell & Soodak, 1993; Shinn, Tindal, & Spira, 1987; Tobias, Cole, Zibrin, & Bodlakova, 1982; Tobias, Zibrin, & Menell, 1983).

Teacher bias may also be impacted by school and administrative factors (Abidin & Robinson, 2002). Districts continue to develop pre-referral intervention teams to address teacher concerns through avenues other than identification for special education (Bay & Bryan, 1992). Many schools have developed different climates to support diverse learners and offer suggestions to classroom teachers to support those learners (Ingalls & Hammond, 1996). These pre-referral interventions are viewed as a possible solution to address increased referral rates and eventual placements in special education programs all around the country (Flugum & Reschly, 1994).

Over the past three decades, there has been a tremendous effort to address the issue of student needs, paying particular attention to the rising number of referrals to special education. Despite these efforts, referrals to special education continue to rise, particularly in the area of high-incidence disabilities (i.e., learning disabilities, mental retardation, and other-health impaired) while referrals to low-incident fields (i.e., deafness, blindness, and orthopedically impaired) have stayed fairly constant (NCES 2003). The general teacher is the true decision-maker in the area of special education referrals and, because of the impact of the general education teacher on the referral process, it is necessary to explore factors such as teacher self-efficacy and school health. Aspects of these two factors relate to each other and to the larger environment in which these decisions are taking place.

Purpose of the Study

The purpose of this study was to determine the relationship of school health and collective efficacy to elementary schools' learning disability prevalence rates. The participants in the study were teachers in elementary schools in a large, suburban district in Northern Virginia.

Research Questions

The following research questions were tested to determine the relationship of school health and collective efficacy to learning disability prevalence rates: (a) How does school organizational health correlate with the number of students referred to special education in a given school? (b) How does collective teacher efficacy correlate to the number of students referred for special education services?

Overview of Methods

Using non-probability sampling, this study attempted to determine if a relationship existed between the learning disability (LD) prevalence rate of selected schools and the OHI-E measure of school organizational health (Hoy, Tarter, & Kottkamp, 1991). Further analyses were performed to determine if the OHI-E (Hoy et al., 1991), alone and in combination with other predictive variables, could be used to predict the number of students referred for special education services. In addition, this study sought to determine if a relationship existed between the LD prevalence rate and collective teacher efficacy using the Collective Efficacy Scale (CE-Scale) (Goddard, 2002) .

Theoretical Framework

Research on teacher beliefs and school environments and their influence on actions and decision-making covers a wide range of factors and beliefs. To organize these studies and to provide a framework for this research, Brofenbrenner's (1977) ecological framework was used as the theoretical framework for this study. This model incorporates the four systems that affect the actions of the teacher. The study was broken into the four systems in the ecological framework: the microsystem, mesosystem, exosystem, and macrosystem. After reviewing the factors in each of the four systems, further research was concentrated on the mesosystem, specifically on collective teacher efficacy and organizational health.

The microsystem, as noted in the visual model (Figure 1), represented the immediate factors that affected decision-making for the teachers in this study. For the purposes of this study, the microsystem included personal characteristics about a teacher (e.g., experience and age) as well as interactions and expectations in the classroom environment (e.g., teacher self-efficacy and classroom management).

The next layer in the theoretical model was the mesosystem. It was defined as the interaction of many microsystems. For the purposes of organizing research this study, the mesosystem represented the school environment. This included school leadership (principal), school support systems (assistance teams), and social networks and pressures within the school.

The third layer in the theoretical model was the exosystem. The exosystem was seen as an extension of the mesosystem which included factors that related to the mesosystem but may have not directly impacted the teacher. For the purposes of this research, the exosystem included school districts and school community, because teachers live and work within these two settings but their influences are likely filtered through the mesosystem. The final layer of the theoretical

model was the macrosystem, which incorporated the laws and policies by which a district an school are governed, including political pressures, social pressures, economic pressures, and the philosophy of society in general (Brofenbrenner, 1977).

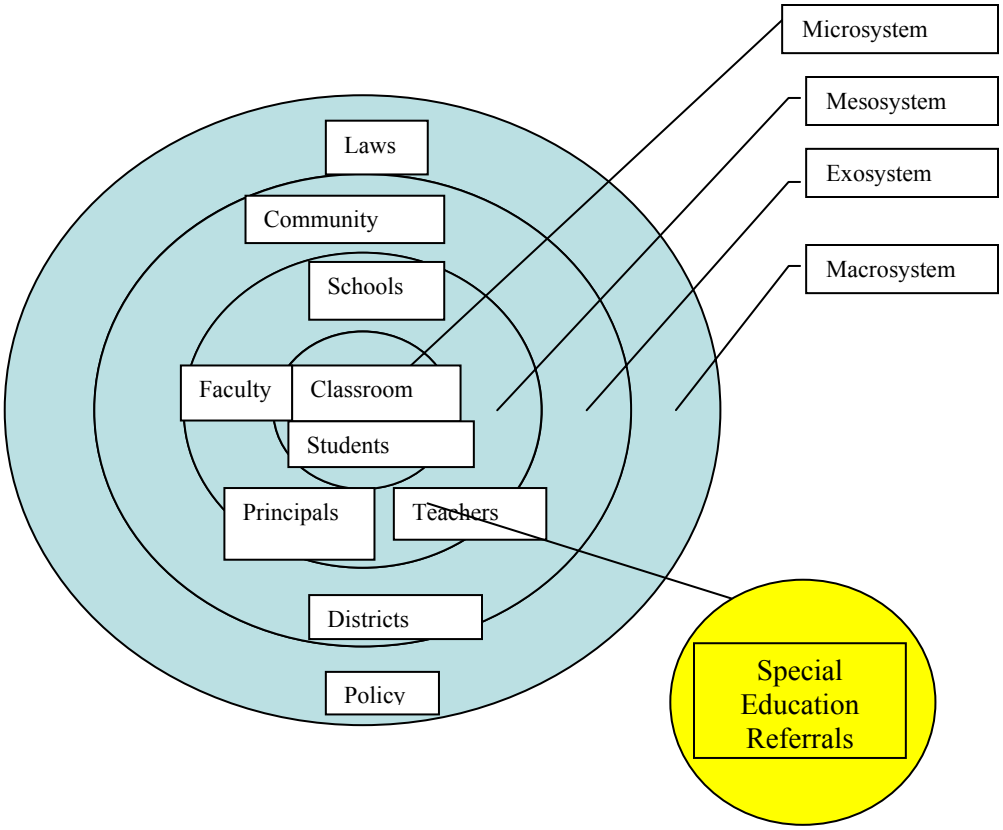

Figure 1. Theoretical framework (adapted from Brofenbrenner, 1977).

With the smallest system, the microsystem, research has identified factors that influence teacher beliefs and actions towards students who learn or behave differently (Brofenbrenner, 1977). Research on self-efficacy has shown that teachers' beliefs about their own skills and student behavior effects how the teacher interacts with the student and how successful that teacher is with the student. Self-efficacy is the underlying teacher variable that affects teacher

decision-making regarding the instruction of students, success of students, and referral of students for special education services (Meijer & Foster, 1988). Bandura (1977) describes self-efficacy in terms of outcome expectancy, which refers to a person's belief that particular results occur from a certain action. Self-efficacy relates to a person's beliefs regarding his or her personal competence to complete a specific task. The actions and reactions of a person are determined by the confidence held regarding tasks and assignments (Bandura, 1977).

In relation to classroom instruction, student performance can be related to a teacher's belief that his or her instruction will result in a desired outcome for the student (Ashton & Webb, 1986). Extending Bandura's theory on self-efficacy, (Woolfolk, Rosoff, & Hoy, 1990) concluded that a teacher's sense of efficacy is one of the few teacher characteristics that consistently relates to teaching and learning. Their research indicated that beliefs about management, motivation, and control are related to both the prospective and practicing teachers' sense of efficacy.

The school environment, or mesosystem, the second layer of influence, also has an influence on teacher efficacy (Dibella-McCarthy, McDaniel, & Miller, 1995; Hipp & Bredeson, 1995; Hoy & Woolfolk, 1993; Miller, 1991). Researchers found that the school organization, discipline climate, leadership, and collegiality influenced teacher efficacy. Those factors identified as influencing teacher efficacy are the same factors that Hoy and Woolfolk define as components of a healthy school climate. The role of the school administrator has been noted as playing a critical role in a healthy school climate and the key individual factor to fostering the teacher collaboration necessary to influence school climate and develop collegiality (Peterson, 1997).

Both the exosystem and the macrosystem contain clear elements that influence school practices and teacher beliefs. In the outer layers of Brofenbrenner's (1977) model, federal and

state guidelines as well as distinct interpretations of special education and referral practices are funneled through the layers to reach, eventually, actual school practice. According to Brofenbrenner, a weak policy signal existing in the macrosystem and interpreted by the exosystem may influence the implementers in the mesosystem who refer students for special education services based on their understanding of it at the microsystem level.

In order for a policy to be implemented, there first must be a clear understanding of the policy:

> Policy messages are not inert, static ideas that are transmitted unaltered into local actors' minds to be accepted, rejected, or modified to fit local needs and conditions. Rather, the agents must first notice, then frame, interpret, and construct meaning for policy messages. Conceptualizing the problem of implementations in this way focuses attention on how implementing agents construct the meaning of a policy message and their own behavior, and how this process leads or does not lead to a change in how they view their own practice, potentially leading to changes in both understanding and behavior. (Spillane, Reiser, & Reimer, 2002) (p.392).

Researchers have concluded that some decisions regarding the identification of a student with disabilities reflect minimal attention to the characteristics and needs of students. In addition, growing rates of special education identification, particularly in the area of learning disabilities, reflect an increasingly ineffective system that depends on concepts and conditions that are not easily defined or understood (Algozzine, Ysseldyke, & Christenson, 1983). Spear-Swerling and Sternberg (1996) have been critical of the current identification process. They propose that states adopt educational policies which allow all low achieving students to receive specialized

instruction, as opposed to a system whose policies mandate services based on specific criteria which have no scientific basis for implementation.

Also existing in the exosystem and macrosystem are researchers exploring why the growth in the number of learning disabled students nationwide has been increasing steadily over the decades (Gelzheiser, 1987; Zuriff, 1996). It has been hypothesized that the unprecedented growth in the LD population is the result of "real increases" attributable to the maturing of LD as a field and a correlating increase in sensitivity in recognizing children with LD (Hallahan, 1992). Hallahan also contends that the increase in growth is attributable to social and cultural changes that have put the nervous systems of children more at risk for damage (e.g., mother's substance abuse during pregnancy or increased stress at home). Others (Gottlieb, Alter, Gottlieb, & Wishner, 1994) hypothesize that the classification of LD is being used by schools as a nonspecific category to account for the many children who fail to meet state criteria for eligibility, while some believe that many children who were once labeled as mentally retarded (MR), of whom a significant number have been minority children, are now being classified as LD (Algozzine, Ysseldyke, & McGue, 1995). Researchers have offered numerous reasons why referral rates are too high, including an imprecise definition of the term "learning disability" itself.

In summary, studies support the relationship between teacher efficacy, collective teacher efficacy, and organizational climate. Brofenbrenner's model (1977) puts these critical elements at the core of decision-making. The microsystem and mesosystem relate to one another and are influenced by the outer elements in the model. This study appears to present the entire ecological model with supporting research at each level while digging deeper into the microsystem and mesosystem, the constructs where school leaders can have the most immediate influence.

Definitions

It is necessary to ensure that terminology used in research be understood and precisely defined. In order to ensure such clarity, the following definitions guided this research.

A *child study team* is a group of people that looks at the history of a child and determines necessary actions to improve that child's outcome. A child study team is composed of a child's teacher (usually the referrer), school administrator, school psychologist, social worker, special education teacher, and other adults who may have pertinent information on the child (Steve Knotek, 2003).

Collective efficacy refers to the perceptions of teachers in a school that the efforts of the faculty as a whole will have positive effects on students (Goddard, 2002).

Disproportionate or over-representation is a term that addresses the percentage of students from a particular group (e.g., ethnic, gender, socio-economic). It identifies such programs as having a greater than expected percentage of that population within the total school population (Meyer & Patton, 2001).

Learning Disabled (LD) Prevalence Rate: This is the percentage of learning disabled students per school (Gibson, 2003).

Organizational climate, for the purposes of this study, was defined by the Organizational Climate Descriptive Questionnaire (OCDQ). This questionnaire portrays the climate of an elementary school, identifying the critical aspects of teacher-teacher and teacher-principal interaction (Hoy et al., 1991).

Organizational health, for the purposes of this study, was defined by the Organizational Health Inventory for Elementary Schools (OHI-E). This tool portrays the health of an elementary

school, identifying the critical aspects of institutional, administrative, and teacher levels and how the school meets functional needs as it copes with disruptive external forces and directs its energies toward its mission (Hoy & Woolfolk, 1993).

Referral was defined as a written form that requests a local screening team assemble at a school to see if a student needs to be tested for possible services through the school's special education program (Gottlieb, Gottlieb, & Trongone, 1991).

Teacher efficacy is a teacher's personal judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated (Bandura, 1977).

Limitations/Assumptions

This study is limited in the following ways: First, due to the use of purposive sampling, the results of the research are limited to the schools included in this study and cannot be generalized to other elementary schools outside the Northern Virginia region. Second, since the survey data were collected on-line, respondents may not have returned information if not comfortable with the on-line format. Finally, the data were collected in early spring using fall LD prevalence rate data. If schools referred more students over the course of the following four month span, prevalence rates could be higher than initially indicated.

Significance of the Study

Current research identifies student, school, school system, and policy factors as items that influence teachers' beliefs about students, in turn, impact the decision-making process regarding referrals to special education. As noted above, an increased number of referrals for special

education services that has been occurring over the last decades continue to be a concern in school districts. With mounting costs to educate special education students, the average cost being $7,856 per child, it is critical to further investigate the teachers' beliefs in the context of the daily environment (NCES, 2003). Under IDEA 2004, pre-referral strategies need to be a part of the daily operation in schools. Researchers suggest that more studies are needed in this area to develop pre-referral techniques that are effective and efficient (Nelson, Smith, Taylor, Dodd, & Reavis, 1992).

One major cause for a referral from a general education teacher for special education services is the lack of student achievement which some researchers believe may be linked to issues of teacher efficacy (Podell & Soodak, 1993). Once the impact of collective teacher efficacy within the framework of the school climate on referral tendencies is determined, school leaders will be better able to support teachers and provide school environments that reduced the inaccuracies and potential bias associated with the referral process. It is clear, from the literature that additional research is needed to determine the relationship between collective teacher efficacy, instructional techniques, and student achievement (Brownell & Pajares, 1999). Brownell and Pajares believe that, if there is a connection among variables, interventions addressing this issue could improve teacher instruction and student achievement.

For school leaders, understanding the organizational factors that influence teachers' beliefs and referral practices may help establish better teacher support systems. Research regarding the school's organizational climate and its effect on efficacy has shown that the influence of the principal and the academic focus of the school were vital to enhancing a teacher's sense of efficacy (Hoy & Woolfolk, 1993). These same researchers recommended

further research in order to find and better understand the relationships between organizational health and efficacy.

Clarifying the relationship between collective teacher efficacy and schools' organizational health should thus allow school administrators to provide both personal and organizational support for teachers. This study addressed these issues by examining collective teacher efficacy, social systems dimensions of school health, and their relationship to LD prevalence rates.

CHAPTER TWO

Review of the Literature

A review of the literature on the Individuals with Disabilities Act (IDEA), LD prevalence rates, referrals, county publications, county data, and national forums related to special education was conducted in preparation for this study. Books, dissertations, journals, and hearing proceedings were also reviewed so that questions could be developed for the survey that covered the entire scope of the issue. The ERIC and Wilson databases, along with Department of Education resources, were used to locate sources that were relevant to the study. This chapter provides information necessary to understand the research surrounding the special education referral issue.

Using Brofenbrenner's (1977) ecological model, the literature was broken into the four systems described in the ecological framework: microsystem (teachers and students), mesosystem (schools and administration), exosystem (districts and society), and macrosystem (laws and policy). Within each system, problems related to special education referrals will be addressed. The chapter concludes with a synthesis of the literature in reference to the investigative areas of the microsystem and mesosystem, particularly collective teacher efficacy and school organizational climate, and their affects of the referral rate for special education.

History of Special Education

Special education began earlier than its formalized conception in 1975. It began with special schools for the deaf and hard of hearing in the late 19th century. Prior to this, students with special needs had to be educated at home unless their parents had the means to send them to

a special school. With the mandatory attendance laws of the 1920s, schools began to accommodate students with diverse needs. The first federal legislation in the 1960s related to special needs populations consisted mostly of grants to support special education programs. In 1975, the Education for All Handicapped Children Act, often referred to as Public Law (PL) 94-142, mandated states to educate all students in order to receive any federal funds (Kauffman & Hallahan, 2005). Since 1975, the major components of this act have remained in federal statutory language governing the education of students with disabilities, even with three major reauthorizations in 1990, 1997, and 2004.

The key principles of IDEA 97, now entitled IDEIA 2004, are zero reject, nondiscriminatory identification and evaluation, free and appropriate public education, least restrictive environment, safeguards regarding procedural due process, and participation of parents and their children with shared decision-making (Kauffman & Hallahan, 2005)Another major component of the law is that, once a student is identified as having a disability, that student would receive a written Individual Education Plan (IEP), which would include a statement of the special services to be provided and the goals and objectives necessary to meet the needs of the student (Kauffman & Hallahan, 2005).

Statutory language mandates nondiscriminatory assessments: An unintended outcome of PL-94-142 and IDEA 97 is the sequence of referring, testing, and placing students with academic and behavioral problems in special education. This refer-test-place pattern has led to over-referrals for special education programs and individual educational plans (IEPs) for more students every year (Schrag & Henderson, 1996).

Each state is responsible for developing regulations for the implementation of federal law and statutory language has not dictated specifics, especially in the area of referrals. Several states

and local education agencies recommend pre-referral interventions prior to referring students for special education (Mamlin & Harris, 1998).

Studying the Problem

Irrespective of statutory language in the law mandating non-discriminatory practices, problems with referrals of students suspected of having disabilities have manifested themselves over the years (Mamlin & Harris, 1998). There are well-documented statistics indicating that the number of students in the LD category has increased dramatically over the past 20 years (NCES, 2003). Two decades ago, fewer than 3% of students were identified with learning disabilities. That number approached 6% of all students in 2002 (*Minority Students in Special and Gifted Education*, 2002). Of the six million children in special education, almost half have been identified as having a specific learning disability. The number of school-aged students served under the LD category increased from 796,000 in the 1976-77 school year to 2,842,000 student in the 2000-01 school year (NCES, 2003).

There are also concerns regarding over-identification of minority students referred for special education services (Oswald et al., 1999). Students with disabilities, minority or not, often enter school undiagnosed and are referred by their regular classroom teacher for evaluations that may lead to placement in special education programs. The cause for higher numbers of minority referrals may be rooted in a bias in the general education system rather than the special education system, since the referrals are generated in general education (Losen & Orfield, 2002). There is little evidence to explain the disproportionate rate of males and African Americans in special education programs. It has been suggested that excessive numbers of minority students are referred and placed in special education programs because of the nebulous and subjective nature

of providing the type of instruction needed to reach difficult to teach children and that instructional methods to address these issues are scarce (Artiles & Trent, 1994).

In IDEA 2004, states must develop a specific system that tracks the number of minority students in special education and develop specific intervention programs to address over-representation in certain areas. Teacher efficacy as been studied as a factor in the identification process that may influence the racial disproportionality (Oswald et al., 1999). Bias on the part of the referring teacher has also been investigated as a possible factor (Podell & Soodak, 1993; Shinn et al., 1987; Tobias et al., 1982; Tobias et al., 1983).

In addition to over-identification, misidentification of students, especially in the area of learning disabilities is an area of concern (Bay & Bryan, 1992). Districts continue to develop pre-referral intervention teams to address teacher concerns through avenues other than identification for special education. All schools have developed different climates to support diverse learners and give suggestions to classroom teachers to support those learners (Ingalls & Hammond, 1996). These pre-referral interventions are viewed as a possible solution to address the increase of referrals rates and eventual placements in special education programs all around the country (Flugum & Reschly, 1994).

Even with pre-referral intervention practices, concerns involving special education services for students who are difficult to teach, but who do not have disabilities, continues to be a concern. This misidentification contributes to the unnecessary labeling of students who have diverse learning and behavior needs. There is a huge fundamental gap between what states specify as criteria for special education eligibility and what public school committees use in deciding which students qualify for special education services. This gap appears to qualify more students for special education than researchers believe fit the criteria (MacMillan et al., 1998).

Equally important is the concern over the high number of referred students who fail to complete formal evaluations because they do not meet eligibility criteria, thereby yielding outcomes such as wasted time, energy, and financial resources (Ingalls & Hammond, 1996).

Over the past three decades there has been a tremendous effort to address the issues of students' needs, paying particular attention to the rising number of referrals to special education. Despite these efforts, referrals to special education continue to rise, particularly in the area of high-incidence disabilities (i.e., learning disabilities, mental retardation, and other health-impaired) while the referrals to low-incident fields (i.e., deafness, blindness, and orthopedically impaired) have stayed fairly constant (NCES, 2003).

The general classroom teacher is the true decision-maker in the area of referrals to special education. The general education teacher's decision to refer a student for special education services is thus a key component of the identification issue. Once a classroom teacher has referred a student, the student has a 90% chance of being formally tested and, of those tested, 73% are found eligible for services in special education (Ysseldyke, 2001). Because of the impact the general education teacher has on the referral process, it is necessary to explore factors that influence the outcomes found within this area, factors such as collective teacher efficacy and school climate. Aspects of these two factors relate to each other and to the larger environment in which these decisions are taking place.

Research Structure

The following sections use Brofenbrenner's ecological framework (1977) to organize research on the four systems impacting teachers' referrals to special education. The research plays particular attention to the mesosystem, the level where school-based administration has the greatest ability to manipulate variables and provide an environment for better practices. Research

is addressed on the exosystem and macrosystem which provide an external environment for school-based policies and procedures. The microsystem addresses teacher and student variables.

The purpose of the review is to demonstrate the role intervening role school climate and collective efficacy play in the determination of teachers' beliefs and actions which influence referrals to special education. Numerous studies demonstrate key relationships between external variables and referrals to special education (Andrews, Mulick, & Wisniewski, 1997; Drame, 2002). This framework will integrate the organizational climate and staff (mesosystem) and the context of the teacher's classroom (microsystem) to account for beliefs that lead to student referrals to special education.

Macrosystem

Within the macrosystem, broad policies exist that influence teacher autonomy and beliefs (Ashton & Webb, 1986). Polices at the federal and state levels are brought to the classroom teacher in a top-down manner. Teachers have little to say in the development of the actual policy and are told how to implement the policy, rather than being privy to actual policy and policy making. Although teachers and school administrators are the implementers of policy and policy change, the disconnect between policy and practice fails to produce the big picture for the implementers (Osher & Quinn, 2003).

IDEA (1997) defines the largest category in special education, the learning disability category, as a disorder in one or more basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. Such terms do not include children with learning disabilities which are

primarily the result of visual, hearing, or motor handicaps, a mental retardation, emotional disturbance, or environmental, cultural, or economic disadvantage (IDEA,1997).

In addition, IDEA (1997) allows each Local Education Agency (LEA) to select tests and other evaluation materials to assess a child under the law. The LEA also makes the policies regarding the determination of whether the child has a disability as long as a team of qualified professionals and the parents are involved in the determination meeting. The federal and state definitions of learning disabilities do not provide objective guidelines and criteria for distinguishing individuals with LD from those with other primary handicaps or generalized learning needs; the LEA makes these determinations. Nevertheless, many individuals have been identified as LD using broad definitions (Moats & Lyon, 1993).

Because each state has been left to develop its own operational definition of LD, and because each has done so with different standards and procedures, it is not uncommon for students to be considered LD in one state but not in the neighboring state. In spite of efforts to refine formulas to measure true aptitude-achievement discrepancy and reliably, eligibility decisions made by educators in the field have been shown to be based more on conceptual and subjective criteria that on objective ones (Moats & Lyon, 1993).

Policy

Some decisions regarding the identification of a student as LD reflect minimal attention to the characteristics and needs of students. In addition, the increasing rates of LD identification reflect an increasingly ineffective system that depends on concepts and conditions that are not easily defined or understood (Algozzine et al., 1983). Spear-Swerling and Sternberg (1996) have been critical of the current LD identification process and maintain that states must discard the notion of learning disabilities entirely because it is built upon a crumbling conceptual foundation.

They propose that states adopt educational policies which allow all low achieving students to receive specialized instruction, as opposed to a system whose policies mandate services based on specific criteria which have no scientific basis for implementation.

Spillane, Reiser, and Reimer (2002) believe that, in order for a policy to be implemented, a cognitive framework needs to be sketched in advance in order for a clear policy understanding to take place. They write that

> policy messages are not inert, static ideas that are transmitted unaltered into local actors' minds to be accepted, rejected, or modified to fit local needs and conditions. Rather, the agents must first notice, then frame, interpret, and construct meaning for policy messages. Conceptualizing the problem of implementations in this way focuses attention on how implementing agents construct the meaning of a policy message and their own behavior, and how this process leads or does not lead to a change in how they view their own practice, potentially leading to changes in both understanding and behavior (p.392).

Researchers note that we are currently in an era where we will see a change in the criteria for special education services in the area of learning disabilities due to the widespread dissatisfaction with the current definition. Over the next decade, the diagnostic constructs from IDEA 2004 will evolve and the requirements will once again be defined by policy (Reschly & Hosp, 2004).

Definition

Kavale and Reese (1991) surveyed teachers of students with learning disabilities with a twenty item questionnaire assessing teachers' opinion in four areas: nature and characteristics,

assessment and diagnosis, service delivery and intervention, and information sources. Upon recommendations, a revised instrument was then submitted to members of the Iowa Learning Disabilities Research Consortium for evaluation. After further revision, the 20-item questionnaire was deemed appropriate for the study.

Surveys were mailed to 968 LD teachers in the state of Iowa and within the two week period and 57% (n = 532) were returned. Using primarily descriptive statistics, the researchers found substantial agreement on the understanding of learning disabilities. Eighty percent of the teachers agreed that learning disabilities are associated with the following statements: a discrepancy between ability and achievement; learning strengths as well as learning weaknesses; academic strength as well as academic weaknesses; processing deficits that interfered with learning ability; average or above average intelligence; the need for special materials in instructional techniques; and the ability to learn at a different rate than individuals with mental retardation (pp. 146-147).

These statements correspond closely with the three components of learning disabilities conceptualizations over the past 30 years as described by Keogh (1994): "Unexpected low achievement true aptitude or ability; deficits and uneven profiles in perceptual or cognitive processes; and evidence of within-child, presumably casual, neurological conditions" (p.16). Keogh concluded, "Although they may have validity on a construct level, these definitional criteria present serious problems of measurement and making diagnostic decisions" (p. 18).

In addition, a clear definition of the learning disability label is critical to its implementation. McCarthy (1971) wrote that

> the most important decision you will make is that of definition – because your definition will dictate for you the terminology to be used in your program, the prevalence figure, your selection criteria, the characterizes of your population, and the appropriate remedial procedures (p. 14).

The term *learning disability* was first introduced for children who were having educational difficulties, but were not eligible for services under any of the identified special education categories (Kirk, 1962). Kirk defined a learning disability a term that

> refers to retardation, disorder, or delayed development in one or more of the processes of speech, language, reading, writing, arithmetic, or other school subject resulting from a psychological handicap caused by a possible cerebral dysfunction and/or emotional or behavioral disturbances and not from mental retardation, sensory deprivation, or cultural and instructional factors. (p. 263)

The definition was modified to include the establishment of a discrepancy between ability and performance, where

> children who have learning disorders are those who manifest an educationally significant discrepancy between their estimated intellectual potential and actual level of performance related to basic disorders in the learning process, which may or may not be accompanied by demonstrable central nervous system dysfunction, and which are not secondary to generalized mental retardation, education or cultural deprivation, severe emotional disturbance, or sensory loss. (Bateman, 1965)p. 20)

In subsequent years, dozens of definitions of learning disabled would be proposed and adapted (Anderson, 1997). In another study, Ysseldyke, Thurlow et al. (1983) found 42 definitions of learning disabilities in the professional literature. After selecting 17 of these definitions to use as classification systems, they found that "more than 80% of normal students and over 75% of low achieving students met criteria for learning disabilities on one or more definitions. Yet only 75% of the students labeled learning disabled met at least one set of criteria for being considered LD" (p. 79).

Although a category of learning disabilities is not determined prior to testing, the learning disabilities category tends to address the concerns that are discussed throughout this dissertation. In cases of suspected learning disability, student underachievement relates to a failure to reach an anticipated level of academic potential. Although students with LD demonstrate average cognitive ability, their performance on tests of academic skills reflects significant deficiencies. The LD student's dysfunctional neural processes are assumed to affect directly the psychological processing systems which are responsible for the acquisition, assimilation, and storage of information. These processing deficits are thought to be the cause of academic difficulties in specific academic skill areas such as reading, writing, and math (Kavale, Forness, MacMillan, & Gresham, 1998).

Criteria

An empirical investigation conducted by MacMillan et al., (1998) examined the extent to which state-mandated criteria were applied for the identification of students with learning disabilities. The criteria were an aptitude-achievement discrepancy and the exclusion of students with mental retardation. The researchers examined 150 students referred to child study teams by

their general education teachers from five California districts in grades 2-4. Permission was obtained for the sample of students and researchers tested these students using the Wechsler Intelligence Scale for Children-III and the Wide Range Achievement Test-Revised. Teachers also completed a packet of scales including the Social Skills Rating System Teacher, the Critical Events index, and the Conner's Teacher Rating Scale. Upon collecting information and test data on each referred student, researchers applied the state's criteria to each student using the information.

Macmillan et al. (1998) used MANOVA to determine the extent to which state-mandated criteria for identifying children with LD were employed by the schools certifying children as eligible for LD services. They characterized the process employed and the criteria actually utilized by the public schools by examining those cases the schools certified as LD. Of the 113 students the schools had reached eligibility decisions on, 61 students in were classified as having LD, less than half had the required evidence that a discrepancy was measured on the tests. Moreover, 18 students with full scale IQs of 75 or lower were classified as LD even though their psychometric profile did not match the LD label. If schools were to apply strict state guidelines to the 150 students, only 30% of the total sample should qualify under the learning disabilities label. These findings support the conclusion that many children are being identified as LD when, in fact, their test scores indicate that they are not learning disabled according to the current definition.

The study concluded that the concept of LD used in the schools is not defined by psychometric profiles prescribed in legislation or used by researchers. Yet, the school team members are aware that certain assessments are mandated by state regulations, which they dutifully complete. Team members perceived the scales used and the diagnostic criteria specified

lacked instructional validity, expressing particular disrespect for the intelligence test (MacMillan et al., 1998). Therefore, the researcher concluded that the assessment process was biased because the members of the multidisciplinary team found eligible students they felt would benefit from LD services but were not receiving those services. Macmillan et al. (1998) concluded that public school personnel believed they were identifying the right children with LD, while federal and state regulations and research criteria actually identified only a subset of these children as having LD. It would seem that school identification practices and research and regulations are on divergent paths.

In the majority of cases, there was evidence of a large gap between what the state specified as criteria for LD eligibility and what the public school committees used in deciding which students will qualify for special education as students with LD, more proof that public school practices for diagnosing children with LD bears little resemblance to what is prescribed in federal and state regulations. Definitions and criteria containing regulations specify markers of LD that justify special education services. Such models are measurement bound, specifying cut-off scores on standardized tests and discrepancies between aptitude and achievement

Interpretation

Scruggs and Mastropieri (2002) reviewed problems in identification of learning disabilities and found evidence to suggest that a very substantial source of over identification of learning disabilities was the application (or misapplication) of criteria at the local level. Their review of problems suggests that a reduction of one-third of identified students could occur if consistent and systemic application occurred at the local level, suggesting, once again, that local policy interpretation and application weighs heavily on identification issues across school systems.

The policy signal received by educators appears to be a significant factor with regard to the identification of students with learning disabilities. The lack of a solid conceptual framework or universally agreed upon working definition of what a learning disability consists of adds to a general misunderstanding regarding the essence of the LD label. In addition, the amount of discretion allowed local schools, with regard to the implementation of a special education program and the identification of learning disabled students, creates variability. The nebulous policy signal that results sends an unclear message to educators and creates a situation in which subjective factors play as great a role in determining whether or not a student is labeled learning disabled as do objective factors. Educators are left to make sense of the policy implications by using their own schemas and knowledge structures that link together related ideas. It is by the use of educators' schemas that one's knowledge, expertise, beliefs, and experience help shape the policy (Spillane et al., 2002).

To date, the macrosystem consists of laws, policies, and regulations that affect how IDEA is implemented at the school. The regulations that comprise the IDEA (year) have had a vast impact on how schools manage students with special needs. The large increase of students classified with special needs since 1974 indicates the impact the law has had on public schools. Although research in the macrosystem has not been evaluated for influence on teacher efficacy, these broad policies are believed to influence teacher autonomy and beliefs (Ashton & Webb, 1986).

Exosystem

The exosystem is an extension of the laws and policies from the macrosystem but may not directly impact the teacher. The school district and the community in which teachers live are represented by the exosystem. Research in this section relates to the special education system as

well as the locality of the investigated system, whether urban or rural, economically challenged or affluent.

Assessment and identification decisions occur at the local level. Significant variability exists between districts with regard to staffing patterns and available student resources. Local implementation of federal and state policies influences programs and available resources in the mesosystem (Fuchs, Deshler, & Reschly, 2004).

Special Education

School-age children who fail to achieve academically, despite the appearance of normal intelligence, are often referred by parents or by teachers for an evaluation to determine their eligibility for special education services. When testing demonstrates a statistically significant weakness in one or more academic skill areas and the student has a discrepancy in academics skill areas and ability, a diagnosis of learning disability (LD) is generally applied (Lyon, 1996).

The adoption of the concept of learning difficulties, as representative of "disability" is a philosophical model that educators have used to understand and frame student failure. This concept stresses the importance of identifying factors which are within the child. This model is often criticized because it fails to fully appreciate other educational or environmental factors responsible for the student's learning problems (Gelzheiser, 1987) and fails because of the absence of a universal standard for identifying the disorder (Ysseldyke, Vanderwood, & Shriner, 1997). LD arose out of the recognition of the existence of a practical problem: There were students in the public schools who encountered substantive learning difficulties despite average, or above-average aptitude and yet "were disenfranchised from any formal special education services because their cognitive and educational features did not correspond to any of the recognized categories of disability" (Moats & Lyon, 1993).

Community Pressures

The majority of teachers and parents realize that, in order to be eligible for additional resources, a child must be labeled as having a disability, a label that signals substandard performance. While that label is intended to bring additional support, it may also bring lowered expectations on the part of teachers, other children, and the identified student. When a child cannot learn without the additional supports and when the supports improve outcomes for the child, that trade-off may well be worth making. Because there is a trade-off, however, both the need and the benefit should be established before the label and the cost are imposed (*Minority Students in Special and Gifted Education*, 2002). The results of labeling to secure additional services may be a significant factor when referring students for special education.

District Resources

Teachers have a higher sense of efficacy when supported by their school system. (Brownell & Pajares, 1999) found that a supportive school district enables teachers to exhibit more efficacious beliefs about instruction of students with disabilities than those who are not supported by their districts. In a study of 200 randomly selected second grade teachers from a large Southeastern County School District, these researchers had teachers complete a survey instrument, Working with Diverse Students: The General Educator's Perspective. Respondents were teachers who worked with students with mild learning and behavior problems in the general education environment. Questions related to a range of beliefs including efficacy, principal support, and district support.

The researchers received a 64.3% response rate on the survey. Using path analysis techniques, direct and indirect effects were investigated from the data gathered. Researchers found that general education teachers who report successes with students with learning and

behavioral issues attribute their successes to educational experiences and support that fostered teachers' efficacy beliefs. Included in these experiences were pre-service preparation programs provided by the school district and collegial environments supported by the building principal. Not only did teachers feel more effective with difficult students, they were also more willing to have the "tougher students" in their classroom. The more these teachers were able to collaborate, the more likely they were to view themselves as having the ability to address a difficult learning or behavioral need in the classroom. Without supportive principal behavior in a supportive school district, this type of collaborative environment would less likely occur (Brownell & Pajares, 1999).

Gottlieb et al. (1994) studied disproportionate referrals in the New York City Schools. In their analysis of White, African-American, Hispanic, and Asian students in special education programs were reported in relation to the total special education population and to their population in the district overall. Data for their research study was pulled from several large-scale studies of special education referral, evaluation, and placement practices conducted in urban school districts over a 10-year period between 1984 and 1993 (Gottlieb et al., 1994).

While reviewing historical data, they found that the willingness of principals to view special education as beneficial for struggling students might have contributed to higher referrals rates in a particular school. Schools that employed a higher number of assistant principals and counselors tended to have a higher referral rate. Students in special education showed unsatisfactory academic progress although the researchers could not say if these students would perform the same if not identified for special education. Gottlieb et al. (1994) believed that the likelihood of referrals decreasing in schools that had so many under performing students was non-existent. The researchers suggested that a simplistic goal such as reducing special education

referrals could not occur in schools that were struggling to improve student outcomes for a majority of the population since reducing referrals does little to improve overall outcomes.

Mesosystem

Moving beyond the factors outside of the school building, the next sphere of influence is the mesosystem, or the school's organizational environment. There are several school factors that influence a teacher's efficacy and a school's collective efficacy which influences referrals to special education. These factors include a healthy school climate and collective staff efficacy which includes the presence of a supportive administration, an environment of shared decision making and a collaborative structure of pre-referral intervention models.

School Climate

The climate of a school is a broad concept that refers to teachers' perceptions of the school's work environment that is influenced by principal leadership, as well as formal and informal organizations within a school. The set of internal characteristics that distinguishes one school from another and influences the behavior of its members is referred to as the organizational climate of the school (Hoy & Forsyth, 2000). Researchers define a healthy school climate as one in which students, teachers, and administrators all strive for a single mission (Hoy et al., 1991).

Mamlin & Harris's (1998) study of a lower middle to middle-class elementary school in suburban Maryland examined the impact of a school's climate on special education referral rates. The authors analyzed the school's underlying philosophy and whether or not a common belief supported referrals to special education. Participants in the study included three general education teachers in the school and the principal. Each teacher in the study made at least one

referral to special education during the school year. Interviews, observations, and student files formed the basis of this qualitative study.

The results of the study indicated that teachers were systematic and thorough in their referral processes. Teachers provided in-depth explanations for each referral. Teachers were referring children whose problems were seen as extreme, whose home situations had been problematic, and whose needs were believed to be beyond the scope of the team. Teachers were referring to obtain documentation to secure effective services in the student's future schools.

Special education labels were placed on students leaving elementary school rapidly because teachers were worried students would not get the support they needed to succeed in middle school. Teachers felt that the elementary climate nurtured the learner, while the middle school climate would not provide the same nurturing learning environment for the student. The reason given repeatedly by teachers and the principal about why a child was referred was the need to provide documentation to meet the child's needs in future schools because the current school wanted to make sure that the student did not fall between the cracks in a larger school. Teachers in the study had multiple, specific reasons for referring children from their class for possible special education evaluation and were worried about how to teach children who learned differently. Teachers did not feel that they were labeling students, but felt as though they were getting them additional help. The researchers concluded that labels were secured at the elementary level to ensure student assistance in the middle and high school due to a different climate of support at those levels (Mamlin & Harris, 1998). Referring to ensure a supportive school climate for students in the future is clearly problematic.

Based on the above research, teachers appear to be influenced by a schools' climate and beliefs about classroom instruction and special education referrals. The degree to which peer and

supervisor influence affect teacher's decisions is likely impacted by several other personal and school-based factors. These additional factors, such as what, may well enhance or detract from a healthy school climate.

Collective Staff Efficacy

Teachers are invariably influenced by their peers. Collective efficacy has been identified as a factor that differentiates schools and is systematically linked to student achievement (Bandura, 1997) and teachers' sense of efficacy (Goddard, Hoy, & Woolfolk, 2000). Bandura, whose research has offered major contributions to theories of collective efficacy, defines the concept as "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment" (1997, p. 477-8). For many years, researchers could not find organizational factors, beyond socioeconomic characteristics of the school and the wider community, which explained student achievement (Hoy, Smith, & Sweetland, 2002). However, there is a recent focus on the effect of collective efficacy of the school faculty, which has been found to be positively related to student achievement (Bandura, 1997; Goddard & Goddard, 2001; Goddard et al., 2000; Hoy et al., 2002). Similar to an individual's sense of personal efficacy, collective efficacy beliefs can affect their goal setting, motivation, effort, and persistence with challenging tasks or situations.

Goddard and Goddard (2001) suggest that collective efficacy beliefs affect teachers' sense of school mission, the extent to which they have a shared perception of school aims, the faculty's tolerance in the face of difficulties, and how well staff members cooperate for achieving desired results. As Bandura (1997) concludes, collective efficacy is crucial for a school, since it enables the interpretation from an organizational perspective of the differentiated effect of schools in student achievement. Despite the fact that teachers' self-efficacy has received

extensive interest, collective efficacy has only recently been at the center of research attention, notwithstanding the recognition of its importance for the full comprehension of organizational functioning (Bandura, 1997).

Collaborative structures and processes follow the premise that teachers are more effective together than they are alone. Using this definition as a framework, Goddard and his colleagues (2000) conceive of the development of collective teacher efficacy as being made up of two key processes: analysis of the teaching task and assessment of teaching competence. Perceptions of collective capabilities within a school are derived when teachers consider one component in relation to the other. When teachers analyze teaching tasks, they are assessing what is required to engage in successful teaching in their school, what obstacles they may face in carrying out their teaching responsibilities, and what resources are available to aid them in their teaching. Assessment of teaching competence involves teachers' beliefs about the abilities of their colleagues and themselves in light of a teaching task analysis within their particular school. This assessment may include judgments about colleagues' teaching skills, training, and expertise. Additionally, when making a judgment related to collective efficacy, instructors may consider what it takes to be a successful teacher, what obstacles teachers in the school face, and what resources teachers have to work with. Teachers also are able to judge the impact they think they, collectively, will have on a child's success (Goddard, 2002).

Recently researchers have begun to empirically explore the construct of collective efficacy within schools, specifically among teachers (Bandura, 1994; Goddard & Goddard, 2001; Goddard et al., 2000; Goddard, Hoy, & Woolfolk, 2004) This research has consistently shown collective efficacy to be related to student reading and math achievement differences among schools. Goddard and Goddard (2001) found that teachers' personal sense of efficacy were

higher in schools that were more collectively efficacious. The overall findings of each of these studies show the importance of this construct not only for explaining school-level effects on achievement, but to also explain effects on teachers' individual self-efficacy. These variable have been closely linked with referrals to special education (Andrews et al., 1997; Ashton & Webb, 1986; Dibella-McCarthy et al., 1995; Woolfolk et al., 1990). Prior research in schools has focused on the relationship between collective efficacy and student achievement (Bandura, 1997; Goddard et al., 2000). As in the case of teachers' efficacy, collective efficacy has not been empirically related to school special education prevalence rates.

Administration

The importance of supportive principal behavior in schools cannot be overstated. As noted in the research by Brownell & Pajares (1999), the ability of a school principal to foster a collaborative school climate affects the teachers' sense of efficacy is critical. In a qualitative study, Lohman (2000) interviewed and observed 22 teachers in order to identify the aspects of school climate which inhibited teachers' informal learning using a constant comparative framework and an iterative coding process were analyzed. During the third phase of data analysis, themes emerged relevant to critical aspects of school environment. The results suggested that low levels of principal support led to less informal learning by teachers. Informal learning was defined by the researcher as a form of reflecting on one's teaching expertise in an effort to cope with problems that arise in the classroom. Informal learning activities included exchanging ideas with others, actively experimenting with new techniques, and using sources outside the classroom. These informal learning activities are all characteristics of effective teacher solutions to issues inside the classroom (Lohman, 2000).

In addition, researchers explored the connection between a teachers' efficacy and the principals' leadership behavior by using both qualitative and quantitative means of investigation (Hipp & Bredeson, 1995). Principals in sixty schools identified as undergoing significant change efforts were asked to participate in a forty-five minute phone interview. The purpose of the interview was to identify ten schools for the sample study by changing efforts unique to each school. The principals and staff of the ten identified middle schools completed a questionnaire which was used to assess the principals' transformational leadership behavior as well as involvement in their building-level change effort. Teachers also completed an adapted version of Gibson and Dembo's Teacher Efficacy Scale (S. Gibson & Dembo, 1984).

Using one-way ANOVA and a correlation matrix, the researchers analyzed the quantitative data. There was a significant difference between principals' perception of their leadership behaviors and how their teachers viewed those same behaviors. Statistically significant relationships were reported between overall leadership behavior and both general teaching efficacy and personal teaching efficacy. These findings supported the implication that principals can positively influence teachers' efficacy through modeling behavior, providing contingent rewards, and inspiring a sense of purpose. The dominant theme across these leadership behaviors was that principals influence teachers more by what they do than by what they say.

In a follow up study, Hipp (1997) interviewed the principals and the staffs of the ten identified schools from the earlier quantitative study. She asked teachers what was different about their principals that made their efficacy higher than others were. Consistency and harmony were two traits echoed by staffs with higher efficacy. Teachers noticed what the principal was doing and were validated by their actions. This study supports the contention that principals can

create positive school climates that foster teamwork and collaboration while increasing teachers' efficacy (Hipp, 1997).

Shared Decision-Making

Researchers have also found that teacher participation in school decision-making has emotional rewards and enhances teachers' sense of efficacy. The Middle School Efficacy Study was conducted in two phases: a questionnaire study designed to compare the efficacy attitudes of teachers in two school settings and a microethnography that investigated the classrooms of two teachers. The second phase of the study explored the relationship between school organization and other school variables (Ashton & Webb, 1986).

Teachers in two schools were asked to spend about 2 hours completing a questionnaire designed to investigate the identified variables. The results of the questionnaire indicated that teacher attitudes at the two schools differed markedly in some areas. In order to understand better those areas related to teacher efficacy, an exploratory microethnography study was then designed. This methodology allowed the researchers to describe the complex meaning systems that people use to understand their roles, their work, and the organizations in which they work (Ashton & Webb, 1986).

Ashton and Webb (1986) suggested that high and low efficacy teachers differed in their interactions with students, especially, in their contact with low-achieving students. Teachers with a high sense of efficacy seemed to employ a pattern of strategies that minimized negative affect, promoted an expectation of achievement, and provided a definition of the classroom situation characterized by warm interpersonal relationships and academic work. Teachers with a low sense of efficacy appeared to establish a pattern of strategies that heightened negative affect and promoted an expectation of failure for low-achieving students.

The teachers with high efficacy were from one school and those with low efficacy were from another school. Not only did the schools differ by levels, one middle and one junior high, the schools also differed drastically in decision-making models. Decision making at the junior high was primarily made by the principal and the administrative team. This junior high also had the higher number of teachers with the lowest efficacy. In turn, the middle school had a drastically different organizational structure to decision-making. Teachers here showed higher self efficacy and described shared decision-making practices in the school such as daily touching base in the faculty lounge, designated team planning rooms, close proximity of classrooms to each other, common focus on the goals of the school, teacher connectedness to the team, shared problem solving, vehicles to communicate to the administration in a collegial manner, and forming of committees to solve problems and make decisions in the school (Ashton & Webb, 1986).

The researches noted that the vast differences in school climate made a notable impact on teacher efficacy. To substantiate the ethnographic observations, the researchers continued with this research and conducted classroom observations. With the belief that teacher efficacy impacts teacher behavior, the researchers selected forty-eight teachers of basic skills classes to participate in this portion of their study. Analyses of the process-product relationships were calculated with the class as the unit of analysis. Partial correlations between teacher attitude and classroom process variables and student test scores were computed. A multiple regression analysis was computed to examine the unique contributions of the efficacy measures (Ashton & Webb, 1986).

The findings supported the hypothesis that teachers' sense of efficacy is related to student achievement. Teachers who assumed more responsibility for their students' learning tended to have higher efficacy scores. Teachers who believed they could make a difference in students'

performance accepted responsibility for student failure and felt guilty about this failure. This guilt appeared to motivate teacher efforts in future teaching settings. The researchers concluded with the premise that teachers with a strong sense of efficacy worked in climates that promoted shared decision-making and collaborative culture. These teachers provided the same environment for their students in order to be successful (Ashton & Webb, 1986).

Other researchers have made an excellent case for greater collaboration and collaborative decision-making at the school (Enderlin-Lampe, 1997). Without the belief that teachers can make a difference either from a personal standpoint or from an organizational stance, meaningful change cannot occur. A meta-analysis of significant studies indicated that a key factor in restructuring schools and teaching practices is teacher beliefs and attitudes regarding their central role in decision-making. Clear goal coherence and defined teacher roles and expectations were found to be a critical piece in schools that must be initiated and sustained by the school leadership and staff (Enderlin-Lampe, 1997).

In another meta-analysis, Adelman and Taylor (Adelman & Taylor, 1998) reviewed literature that addressed the key of collaborative roles and their affect on establishing classroom interventions for at-risk students. They found that many teachers see little to be gained from working with teams to solve classroom instructional issues. A key finding was that teams cannot be formed for the sake of just meeting, but clear, established criteria should be used to help teachers organize a network to help struggling students (Podell & Soodak, 1993).

Pre-referral Intervention Models

The emergence of several pre-referral intervention models reflects the effort of schools to reduce the number of referrals to special education, increase accuracy rates for students found eligible for special education, and increase the ability of regular education teachers to educate

students with a wide range of behavioral and academic difficulties in their classrooms. There have been several studies assessing the effectiveness of pre-referral efforts in improving student outcomes, increasing teacher effectiveness, and reducing referral rates in various school districts.

Several studies have noted that the presence of pre-referral programs have had a positive effect on reducing referral rates (Sindelar, Griffin, Smith, & Watanabe, 1992). One study conducted by Nelson, Rutherford, Center, and Walker (1991) assessed the influence of school-based problem-solving pre-referral teams on reduction of referral rates. Several articles referencing consultation programs were examined for dependent and independent variables in addition to research focus and author. The researchers then further examined the 16 articles studying intervention approaches and outcome summaries for each consultation program. The articles they reviewed related to pre-referral interventions including: Teacher Assistance Teams, School Consultation Committees, a Prereferral Intervention Model, Teacher Resource Teams, and Peer Problem Solving Teams.

Findings from the literature meta-analysis depended on the type of intervention provided: Teacher Assistance Teams reduced referral to special education, as did School Consultation Committees, while the Prereferral Intervention Model decreased formal special education testing in some schools but not across the board. Teacher Resource Teams saw an improvement in student-teacher interaction while the Peer Problem Solving team increased teacher tolerance for the range of teachable students. The pre-referral intervention models appeared to increase the abilities of teachers to educate students who were experiencing difficulty and improve the attitude of teachers toward such students. Overall, pre-referral interventions appeared to reduce the number of students referred for formal assessment and subsequently placed in special education.

Teacher Assistance Teams (TATs) are a common pre-referral model noted in the previous study. These teams are usually informal, problem solving teams or models involving consultation with educational specialists (Pugach & Johnson, 1989). This consultative model typically involves a one-to-one relationship between the referring classroom teacher and the educational specialist (e.g., special educator, case manager, school psychologist), in which the parties discuss and develop intervention strategies for a target student. However, critics suggest that, despite being classroom-based and one-to-one, consultation between a regular classroom teacher and a specialist maintains dependence on special education staff to provide solutions to all problems and creates potential "problems of ownership" (Pugach & Johnson, 1989).

The primary structure of these TATs involves the creation of a core team that includes regular education teachers and the referring teacher, with the addition of other personnel when necessary. Nelson, Smith, Taylor, Dodd, and Reavis (1992) sent a 12-item questionnaire to forty special education administrators in the state of Utah. Using Likert-type questions, the researchers asked respondents which pre-referral interventions procedures were successful in their districts. The study found that special education administrators were uncertain about assessing the effectiveness of pre-referral models, suggesting that evaluation procedures were ineffective or nonexistent in most schools districts.

In addition, the successful implementation of school models such as TATs appears to depend on the severity of the original problem and the successful implementation of strategies by the classroom teacher, as well as other school practices within the building. When pre-referral teams are mandated to be more formal in nature, there seems to be a danger that these teams may become centralized and hierarchical, like a multidisciplinary team involved in the formal special education referral process (Sindelar et al., 1992).

The most common interventions implemented by general education teachers included consultations with professionals, conferences, behavior management techniques, and individual instruction. (Safran & Safran, 1996) found that only pre-referral intervention programs affiliated with universities resulted in decreases in the number of student referred to special education. Furthermore, teacher satisfaction with the simplicity and effectiveness of pre-referral intervention techniques was found to impact the likelihood teachers implementing suggested strategies.

In another study, nine pre-referral teams were established and provided inservices and ongoing support to school team members to assist with intervention activities. This action was needed since many rural districts in northern Idaho did not have pre-referral intervention teams (Ingalls & Hammond, 1996). Data on the teams were collected over a period of five years to identify the number of students being referred to pre-referral teams, referred for special education assessments, and qualified for special education services. The data were analyzed using a chi-square test to determine if the frequency of students referred or placed in special education services for each phase were significantly different.

The resulting analyses found a significant decrease in formal referrals and placements between phases, indicating that these teams were effective at successfully implementing the school-based pre-referral activities. When comparing data on the number of students referred for pre-referral interventions across all five years, it was evident that the teams were successful in reducing the number of children referred for special education and that 72% of the students were successfully assisted in the classroom by pre-referral suggestions. This reduction supports the content that general education teachers were able to implement many of the strategies and

modifications needed to help students be successful with the general education curriculum (Ingalls & Hammond, 1996).

In another study, Burns (1999) surveyed 25 elementary schools to determine if they used pre-referral models and if they used a special education person as part of their team. Upon receiving the information, the researcher grouped the schools with a special education team member (n = 13 schools) and without a special education team member (n = 12 schools) into different groups. The two groups were then compared for rate of student retention and referral to special education. The means of the two groups were compared using the *t*-test statistic. The results indicated that those teams without a member knowledgeable or certified in special education had a much greater chance of referring students for special education than those with a team member from special education. In summation, it appears there is an advantage to having at least one person versed in special education on a team because this study shows that having such a member on the team decreased the number of students referred for special education services (Burns, 1999).

Pre-referral programs appear to have a significant impact on the number of students who are eventually referred to special education services (Mamlin & Harris, 1998). Their effectiveness, though, is not guaranteed (Ingalls & Hammond, 1996). That said, it is clear that the ability of a teacher and a teacher's assistance team to develop an effective and practical response to a problem situation is critical. In addition, pre-referral programs have been shown to be more effective when they have the support of both the teachers and the staff (Sindelar et al., 1992).

School Study Teams

In addition to intervention teams, the makeup and culture of a school study team (SST), sometimes called the child study team or local screening team, is critical to the special education referral process (Gresham, MacMillan, & Bocian, 1998). Such school study teams are school-based committees, whose members determine if a student should be evaluated for special education eligibility (MacMillan et al., 1998). They are a part of a school's social environment and have an impact on the referral process.

Schools exist in a social environment including teachers, administrators, and parents, none of whom work in isolation from the others. Taking the social context into consideration and appreciating the research on peer collaboration, Knotek (2003) used an ethnographic approach to study the referral process in the context of Child Study Teams. His study explored how social situations provide a context and accompanying norms that shape relationships, behaviors, and discourse among peers. The research provided a social context that guided interpersonal and decision-making processes of its members and allowed for careful examination of how social and interpersonal processes shape and inhibit referral and discussion of students.

Knotek's (2003) study examined how the social process and context of a team may or may not inhibit the group's thorough and unbiased discussion of students' needs. Knotek attended child study meetings and found four social themes prevalent throughout the schools participating in his study. First, a social context was set up in which the teacher was in the position of describing either the student or him- or herself as a problem. Since teachers' reputations appeared to be at stake, the likelihood of describing the problem as the student's failings as opposed to instructional failings was dominant. Since teachers framed initial discussions about the child around this description, initial explanations of student problems were

described by Knotek as evaluative summations rather than concerns. The teams observed supported the teacher's illustrations of the problem, sometimes by adding additional noted problems about the child (i.e., home, family, and siblings), validating colleagues' experiences, and offering less reflection on concern about the students.

The second finding of the ethnographic study (Knotek, 2003) was that a student's socioeconomic status was discussed by the team during the initial part of the process, when the group was creating its own representation of the student and school-related problems. The social status of the child's family was often given undue consideration as being a key feature of a student's school-based functioning. Another key finding was that social influence was indeed a potent mediator of the problem-identification process in the Child Study Team meetings. High-status team members (i.e., principals or advanced degree members) would affect the direction and tone of the discussion through their use of descriptors and conceptualizations that other team members found salient and adopted for their own use in the team. The final finding of Knotek's (2003) study was that intervention prescribed by the team usually failed and the students were eventually referred for special education. The interventions were influenced by the social routine of the team and interventions were often complicated and subjective since they were based upon evidence that related directly to student behavior, family, and socioeconomic status.

The problem-solving process can become more subjective and the social process of the team influenced by these factors, resulting in exposure to possible bias in the process (MacMillan et al., 1998). Knotek (2003) concluded that, when there are no collegial or collaborative teams consisting of peers and school does not contain elements of a healthy environment, the chance that bias can creep into the referral process is highly likely.

In another study of teams, researchers investigated the degree to which school study teams considered and used results from traditional psychoeducational measures in determining eligibility or ineligibility for special education (F. Gresham et al., 1998; MacMillan et al., 1998). Three groups of students (learning disabled, mild mentally retarded and low achievers) were compared to school study team classification decisions to determine relative rates of agreement or disagreement. Participants were 150 elementary students from grades 2, 3, and 4, in twenty-four schools in Southern California. All students had been referred but had not been evaluated at the time of the research. Teachers provided an academic competency rating for each child upon receiving parental permission for participation in the study and were broken into three groups depending on results from their Wechsler Intelligence Scale test.

The results from Gresham et al.'s (1998) study indicated substantial differences between the students. The three groups were based on IQ scores (LD n = 47, Mild Mentally Retarded (MMR) n = 43, and Low Achieving n = 60), but teams classified students differently. A total of 28 students from the LD group were deemed eligible by these schools for special education in LD, MR, or speech and language impaired categories, with eight cases deemed ineligible. From the MMR group, 29 cases were deemed eligible with six cases ineligible. Only 16 students from the LA group was declared eligible, with 27 students deemed ineligible. A total of 24 cases were pending and 12 cases had moved outside the district. Of students classified, results differed drastically from the research team. The analysis of agreement between the student study team classification and the research definitions of disabilities showed a low level of agreement: In other words, student study teams strayed from research definitions and qualified students under different labels.

The findings suggested that the diagnostic process carried out by SSTs were (a) not guided by authoritative definitions of mild disabilities and (b) not heavily influenced by the results of formal, psychoeducational assessments (Gresham et al., 1998; MacMillan et al., 1998). In fact, SSTs were found to be making decisions based on their perceptions of what was best for a child in terms of educational needs, not whether or not the child met special education criteria.

The extensive research that has been conducted concerning the mesosystem illuminates the strong influences the school environment has on teacher decisions. A healthy school climate, positive peer relationships, supportive administration, collaborative pre-referral intervention models, and shared decision making are seen as key elements affecting collective staff efficacy.

Microsystem

Researchers have been able to demonstrate that numerous factors within a microsystem have an impact on teacher efficacy which may influence how teachers react to students with special needs (Dembo & Gibson, 1985)Research has also demonstrated that the classroom environment, or microsystem, has a relationship with teacher efficacy and beliefs about students (Meijer & Foster, 1988). The components of the microsystem that have been shown to have an impact on teacher efficacy are teacher characteristics such as knowledge and attitude, the actual classroom environment, student situations, and student academic achievement (Cooper & Speece, 1990). This section briefly outlines the microsystem variables that may affect referrals to special education.

Teacher characteristics

Most school-age children are initially identified and referred for special education services by their classroom teacher. Therefore, the classroom teacher's role in determining whether or not a student receives special education services is critical (Tymitz, 1984). Algozzine and Ysseldyke (1982)conducted a classic large-scale survey study examining referral and placement rates and reported that 92% of referred students were tested and 73% of those students qualified and were placed in the categorical programs that the general education teacher suggested in the referral. In 1997, Ysseldyke et al. replicated Algozzines et al.'s (1982) study and obtained similar results.

Because teacher referrals seem to play such an important role in whether or not a student receives special education services, several studies over the last several decades have attempted to evaluate the accuracy of these referrals. Gresham, Reschly, and Carey (1987) found that teachers could reliably and accurately identify children in need of special services. However, these findings were limited because the teachers who provided the rating were aware of their student's previous classification as LD. Ten years later, Gresham, MacMillan, and Bocian (1997) examined this issue again, finding that teachers could discriminate students in need of special services from "normal students", but could not distinguish between low achieving, learning disabled, and mildly mentally retarded students. Due to methodological limitations within each of the studies, the accuracy of teacher referrals is still largely equivocal.

The significance of teacher referrals and questions concerning the accuracy of such referrals has led several researchers to attempt to identify teacher attributes that may have an impact on whether or not a child is referred for special education services (Cowen, Weissberg, & Guare, 1984). Pugach (1985) stressed that it is the individual classroom teacher's decision to

refer that is the pivotal point in the identification process of a student with a disability. The literature has suggested that identification and referral decisions are based on characteristics of the teacher rather than exclusively on those of the students. Kauffman, Lloyd, and McGee (1989) identified tolerance, perceptions of normality, access to reinforcing properties of referral (i.e., attention and escape from the difficult child), and system resource constraints as factors that may introduce bias to the decision-making process. Therefore, the attributes of the teacher such as attitude and perceptions, tolerance, and teacher knowledge have been identified as potential factors that influence teacher efficacy and referrals for special education services (Podell & Soodak, 1993).

Drame (2002) investigated the relationship between teachers' perceptions of students' behaviors and teachers' referral tendencies within a sociocultural framework. The study represented an initial step in discovering the nature of teachers' attitudes toward different types of student behaviors. The study assessed how teachers' attitudes and perceptions were related to referral decisions while accounting for the impact of the wide range of individual, classroom, and school contextual variables.

Drame (2002) found that several teacher variables such as teachers' beliefs about the types of classroom behavior that placed children at risk for school failure, instructional beliefs, and attitudes towards referral decisions and classroom management had a potentially significant influence on general education teachers' referral tendencies and perceptions of problematic student behaviors. The analysis indicated that very few teacher variables were specifically related to teachers' perceptions of behaviors relative to classroom management or referral tendencies. However, one significant finding involved teachers' perceptions of whether or not a learning disability consisted of academic difficulties related to their behavioral perceptions:

Teachers' perceptions of academic learning disabilities, characterized by reading or writing difficulties, were related to their tendency to view aggressive behavior and temperament-related behavior, such as distractibility and impulsivity, as disruptive to classroom management. This perception led teachers to refer more often when confronted with negative temperament-related behaviors.

Tolerance has been identified by many researchers as one of the key teacher attitudes that influence referral decisions. Gresham (1991) defined tolerance as the extent to which a behavior disturbs others in the child's environment and the probability that adults in the environment will implement strategies to reduce the occurrence of the troubling behavior. Gerber and Semmel (1984) defined tolerance as "the summation of the interactions of teacher, target student, and peer characteristics in such a way as to define a modal range within which students are perceived "teachable" and a preference for some observable distribution of learning outcomes" (p.143). They also recommended more research in the area of teacher tolerance and difficult students.

Several subsequent researchers attempted to quantify teacher tolerance and measure its influence on special education referral rates and the assignment of an LD label. Algozzine and Curran (1979) conducted a study in which teachers rated a hypothetical child's likelihood to be successful in a regular classroom. These teachers were also given a tolerance test and were found to have varying tolerance levels for different types of student behaviors. These varying levels of tolerance were reflected in their predictions of success for the hypothetical students in the regular education classroom, with tolerance level and prediction of success positively correlated. Their rationale for these findings was a Swap's (1974) "goodness of fit" theory that certain teachers can be matched with certain students whose behavior will be more readily tolerated in their classroom than that of other types of behavior. Safran and Safran (1984) built on these studies by

developing a new teacher tolerance scale and found similar results: Externalizing or disruptive behaviors were least tolerable among teachers and internalizing or teacher-directed behaviors were not rated as negative by teachers.

McIntyre (1990) attempted to predict referral using a measurement of teachers' standards for behavior, the SBS Inventory of Teacher Social and Behavior Standards, and a measurement of teachers' perceptions of the behavior of referred and non-referred elementary students, the Child Behavior Checklist. Using regression analyses, McIntyre determined that high aggressive scores on the Child Behavior Checklist combined with high teaching standards significantly predicted 9.7% of the variance in teacher referrals. Furthermore, less tolerant teachers with strict standards referred more students who exhibited low levels of aggression. More tolerant teachers with less strict standards of behavior referred only those students with high levels of aggression. This meant that less tolerant teachers viewed small deviance in a behavior more negatively. In contrast, behaviors had to be more severe before more tolerant teachers would refer. Together, the two-way interactions of student aggression with teacher standards and gender explained 19% of the variance in teachers' referral decisions.

Studies of teacher tolerance have shown that certain behaviors are generally more tolerable in the classroom than other (Algozzine et al., 1983). Elementary teachers (n = 116) were given case studies to examine, half of which described a student as having immature behaviors and the other half a student having unmanageable behaviors. The teachers were then asked to determine to what extent each student had a behavior problem, a learning problem, or both, and to predict future class placement. The teachers were also given a tolerance scale and asked to classify behaviors as either highly- or lowly-tolerant. Two sets of *t*-tests were completed. High- and low-tolerance groups were compared on 13 different responses about

students exhibiting immature or unmanageable behaviors. While there were no significant differences in classifying student disability, these groups differed in their predictions for future classroom placement of the case study students. Highly-tolerant teachers were less likely to predict that a student would be placed into special education than the lowly-tolerant teachers. Zigmond (1993) emphasized the connection between a teacher's tolerance level, perceived ability or inability to provide instruction, and likelihood of a teacher referring a student to special education. According to Zigmond;

> A referral is a signal that the teacher has reached the limits of his or her tolerance of individual differences, is no longer optimistic about his or her capacity to deal effectively with a particular student in the context of the larger group, and no longer perceives that the student is teachable by him or herself (p. 262-263).

The above-mentioned studies illustrate the substantial impact that teachers' perceptions and attitudes have on the special education referral process. In order to determine why students are referred for special education, these teacher attributes must be taken into consideration and will be discussed next.

Teacher inability to educate difficult students is frequently associated with a lack of expertise and a feeling of being overwhelmed due to the fact that teachers are constantly barraged with conflicting recommendations about how to teach students. It also appears that many teacher preparation programs are not directly training teachers to provide many of the elements of differentiated instruction that are critical for at-risk students. Research observations are consistent with recent estimates that only about one in ten teachers have the necessary

expertise to teach reading to children experiencing reading difficulties (Mathes & Torgesen, 1998). The successful preparation of teachers to address the needs of individuals with different learning needs is dependent, to a large extent, on practitioners' abilities to identify and define what good instructional practices and interventions are and how to generalize them across all types of children (Moats & Lyon, 1993). This lack of training may lead to teachers' lack of differentiation when students require specific skills in order to be academically successful.

A study conducted by O'Conner, Fish, and Yasik (2004) observed novice and expert teachers and sought to examine differences in communication, flexibility, and cohesion. Expert teachers were defined by the principal and had more than five years of teaching. Novice teachers were also defined by the principal and had less than one year of teaching. Thirty-five teachers in both groups were sampled from seventeen schools in New York State. Using the Classroom Systems Observational Scale (CSOS), 50-minute observations were conducted on each teacher in the study. The researchers then conducted a number of analyses on the data.

A *t*-test revealed that expert teacher classrooms had a significantly higher communication score and a significantly higher flexibility score although there was no difference found in a students' sense of belonging (O'Connor, Fish, & Yasik, 2004). Although this study did not examine novice and expert referral rates to special education, one might suggest that, to differentiate instruction for students with special learning and behavioral problems, a novice teacher may experience more difficulty since they appear less flexible and have lower communication scores than their expert counterparts.

In one study, Haager and Windmueller (2001) sought to evaluate the effect of professional development teams on teacher education levels and referrals. A full-time professional development team was assigned to an urban elementary school of 335 students

where 17 out of 25 of the teachers were first or second year teachers. By the end of the year, after regular modeling by the professional development team, teachers reported that the use of ongoing assessment to guide their instruction had a significant impact on their tendency to refer student to the Child Study Team. Teachers were less apt to refer students for special education services once they felt they had the tools to address differentiation needs within their classroom. Although there was no control school used in the study, the researchers concluded that ongoing professional development of teachers, especially those teaching with emergency certification, should be considered critical in the reduction of referrals (Haager & Windmueller, 2001). The research indicated that teachers who have the skills and knowledge to teach academically struggling children were less likely to rely on referrals to the special education program to provide specialized instruction to these students.

Classroom Environment

The research on classroom environment supports the contention that the microsystem is influential on teacher referral rates. In one of the first studies of its kind, researchers (Newmann, Rutter, & Smith, 1989) evaluated the correlation between the dependent variables of efficacy, community, and expectations with the independent variables of student background and organizational climate. The researchers administered the 1984 Administrator/Teacher Survey to 353 public high school teachers and administrators. Over 10,000 surveys were returned representing, a response rate of 86%. The survey asked for information from administrators and teachers about their perceptions of school climate and background variables.

A number of school variables were identified as corollaries to teaching climate. The most prominent was between teacher efficacy and orderly student behavior. Regression analysis was used to test the data and an orderly discipline climate was found to have the strongest correlation

to teacher efficacy (r = .456). One necessary component for teachers to feel a higher sense of self-efficacy was teacher ability and confidence to control their class, a correlate of an orderly discipline climate. Low-efficacy teachers noted over 20% more behavior problems then high-efficacy teachers. The study also supported the premise that teachers who feel they have a more orderly classroom (even if they may not) will maintain higher levels of self-efficacy. These findings regarding classroom context and higher levels of self-efficacy were supported by Drame's (2002) hypotheses that the presence of a high proportion of students with learning disabilities in a classroom may be associated with higher referral rates from a general education teacher due to the fact that the teacher would be experiencing a lower sense of self-efficacy.

Cooper and Speece (1990) noted that particular types of instructional activities increased the risk for referral. In this study, 103 children considered to be at risk for school failure as identified by their classroom teachers were compared with 87 children who were achieving in the normal range for performance. Students were drawn from two large public school systems around Washington, DC. The researchers observed and coded the first grade classroom environments by activity, task, groupings, and teacher behavior. Children were observed on two occasions for a total of 30 minutes. Using descriptive statistics, the researchers analyzed the data and found that the most common instructional activity that placed children at a greater risk for referral was independent seat work with little engagement. This instructional arrangement appeared to increase off-task behavior, which, in turn, placed a child at a higher risk for referral.

The results of the Bay and Bryan (1992) study reinforce the theory that teacher-student interaction has a significant impact on student referral rates. The study showed that low-achieving students in urban schools who were not at-risk were called on more frequently by their teachers and received more corrective feedback than at-risk low achievers. At-risk low achievers

received fewer learning opportunities than their fellow low achievers who were not at-risk. In other words, because they were called on less frequently, these at-risk low achievers received fewer opportunities to have their answers and various problems corrected. In the suburban school, all low achievers received more corrective feedback and were called upon more frequently than their average peers in suburban schools were.

Gerber and Semmel (1984) suggest that decisions to refer a student in many cases are ones of straight economics, particularly as related to maximizing limited teaching resources. In their analysis, teachers were hypothesized to have two methods of increasing their teaching effectiveness: While most teachers attempt to increase teaching resources by doing such things as gaining an instructional assistant, others refer poor-performing students out of the classroom so that the teacher's limited resources can be applied to those who profit most from the resources available. Since all poor readers cannot be referred and placed in special education, the removal of some may be sufficient, particularly as referred students often have associated school-related problems or do not meet the preferred biases of the teacher.

Researchers have shown that student misbehavior is one of the most influential factors affecting teachers' decisions to refer students to special education (Hutton, 1985). Low and Clement (1982) studied the impact of classroom behaviors on referral rates, randomly selecting 104 fourth-grade male children placed in regular education classes. Students represented three ethnic backgrounds and were distributed across three socioeconomic status groups. The independent variables were race and socioeconomic status and the dependent variables were classroom behavior, academic achievement, and referral to special education services. Five trained observers collected observational data on the targeted children for four days. A two-way MANOVA and four multiple-regression analyses were used to analyze the data. The authors

found that classroom behavior had a bigger impact on referral rate than either ethnicity or socio-economic status. According to the study, child on-task behavior was by far the largest contributor in the prediction model for determining special education referrals.

In another classroom study, researchers explored classroom factors associated with referral to special education (Skiba, McLeskey, Waldron, Grizzle, & Bartley, 1993). Classrooms were divided into high-, medium-, and low-referral rate groups. Students were observed in the areas of instruction and behavior in instructional settings. Observers were trained using the Code for Instructional Structure and Student Academic Response tool. Observations occurred four times over the course of the year. The student was the unit of analysis. Descriptive analyses indicated that the instructional structure of the classroom did not prove to be a significant predictor of referral but the frequency with which a variety of management strategies were used in both reading and whole group instruction related to classroom referral rate, confirming the hypothesis that teachers with lower referral rates may simply have more behavior strategies to deal with inappropriate behaviors in the general education setting (Skiba et al., 1993).

Student Situations

Researchers (Anderson, 1997; Bay & Bryan, 1992; Hill, Baldo, & D'Amato, 1999) have studied various child characteristics that may be relevant to special education referrals. Some of these characteristics include ethnicity, gender, problem type, and socio-economic status. These circumstances may affect how students presenting different issues are taught and how effective teachers are with different presenting problems.

Evidence suggests that teachers may be referring students who are culturally and linguistically different from them due to limited knowledge of or limited ability to apply effective practices for diverse learners (Oswald et al., 1999), thus producing overrepresentation

of certain ethnicities in special education classrooms. Such overrepresentation is determined to exist when a particular group is represented in a program by a substantially larger percentage then in the population as a whole.

Studies have shown that African American students are disproportionately placed in special education nationwide and that Hispanic students in certain states are also disproportionately placed (Artiles & Trent, 1994). This overrepresentation of minority students in special education has raised an ongoing controversy about the equity of the referral process. In 1999, the National Research Council conducted a study to determine the factors accounting for disproportional representation of minority students and males in special education programs. While about 5% of Asian/Pacific Islander students were identified for special education, the rate for Hispanics was 11%, 12% for whites, 13% for American Indians, and over 14% for blacks (*Minority Students in Special and Gifted Education*, 2002).

In a recent study (Voltz, Brazil, & Scott, 2003), researchers asked 33 teachers, comprised of teams of at least two, from a large metropolitan school district to take part in a teacher-directed professional development program designed to foster teachers' knowledge and skills related to understanding and addressing culturally influenced learning and behavioral differences. Participants were administered a pre- and post-assessment interview with Likert-type questions regarding attitudes, perceptions, knowledge, and experiences with referring students to special education. Teams participated in a three-day seminar which involved teachers examining their lesson plans and working to make them more reflective of multicultural needs in their classroom related to content, methods, materials, and types of assessments. Lesson plans were reviewed by the researchers prior to the workshop.

The pre-assessments tests indicated that these teachers felt comfortable working with culturally diverse parents but felt less comfortable addressing the needs of diverse students. A large majority of the general education teachers (70%) had referred at least one student during the course of the school year for special education services. Teachers reported feeling that pre-service training did not prepare them sufficiently to meet the needs of their learners without having a special education intervention. Post-assessments were conducted fifteen weeks after the three-day workshop. The majority of the teachers felt that the intense workshop had increased their knowledge and skills with respect to teaching with a multicultural perspective and, to some extent, had changed the way they taught. Over two-thirds of the participating teachers made vast changes in their daily and long term lesson plans to address the needs of diverse students, using multiple intelligence techniques in their instruction.

The findings from this study support the premise that teachers who feel less effective with certain groups of students, albeit due to lack of formal instruction or lack of experience, tend to refer these students to special education classrooms unless given the tools to effectively teach them in the general classroom. Teaching with a multicultural perspective could potentially translate into a decrease in overrepresentation of diverse students in special education for several reasons. If, in fact, practices such as content integration and equity pedagogy create a learning environment that better facilitates the achievement of diverse populations, learning outcomes and decreased referrals will result (Voltz et al., 2003).

Gender

In addition to ethnicity, gender has also been a much studied factor with regard to special education referrals. In a recent study (Vardill & Calvert, 2000), two researchers examined data that revealed a 3:1 referral ratio of boys to girls in special education classrooms. Over the course

of one year, the researchers kept track of the male-to-female ratio of referrals from four secondary schools, 19 primary schools, and two nursery schools. The researchers grouped referrals for physical impairments and hearing loss separately from referrals for behavioral and learning issues to concentrate efforts on problems perceived by teachers.

In another recent study (Wehmeyer & Schwartz, 2001), two researchers conducted a comprehensive records review of all students admitted to special education across three school years to examine gender differences in referral, admission, and placement decisions while looking at factors contributing to admission in special education classrooms. The population from which the sample was drawn consisted of all students enrolled during one of three school years in one of three school districts with populations from 10,000 to 20,000 students. Record reviews were conducted on students admitted to special education for the first time with a handicapping condition of mental retardation or learning disability. Students age six or older were the target group, so as not to have early intervention factors influencing the findings.

After collecting data on gender, ethnicity, and disability, Wehmeyer and Schwartz (2001) analyzed the results. A total of 695 students were admitted into special education over the course of the three years: 462 males (66% of total sample) and 233 females (33%). The vast majority (n = 609, 87.6%) of the students had a learning disability with only 86 students (12.4%) being mentally retarded. Of students with learning disabilities, 417 were males (68.5%) and 192 female (31.5%). For students with mental retardation, 45 were males (6.5%) and 41 were females (5.9%). The percentage of racial groups represented in this sample was generally representative of the nation, with Caucasian students representing 67.5% of the students across all three districts, African-American students representing 19.8%, Hispanic students representing 7.9%,

Asian American students representing 2.8%, and Native American students representing .5% of the student body. Data on ethnicity was absent for 1.4% of the sample.

These results provide preliminary support to emerging suggestions that females with disabilities are underrepresented in special education services largely due to biases based on behavior and gender stereotyping: Of all students admitted to special education for the first time, boys outnumbered girls two to one. Diverse teaching strategies and enhanced teacher efficacy for females and males may thus also have a positive impact on referrals (Wehmeyer & Schwartz, 2001).

Student Academic Achievement

Student problem type is characterized by the type of difficulty a student manifests in the general education classroom: academic, behavior, or both. These problems have been identified as one factor contributing to teacher referrals for learning disability evaluations (Gottlieb et al., 1991). Although researchers such as Ysseldyke, Christenson, Piata, and Algozzine (1983) have cited academic difficulties as the most frequent reason for referral, others such as Abidin and Robinson (2002) have reported that behavior problems constituted the most prevalent referral concern.

Cooper and Speece (1988) investigated contextual risk factors associated with the likelihood of referral and placement in special education programs. After conducting a cluster analysis and creating relatively homogeneous subgroups of children with similar individual characteristics in learning environments, the authors attempted to determine profiles of risk factors related to referral. The presence of poor reading achievement increased the risk of referral for children with deficient work-related skills such as disorganization, distractibility, and

noncompliance. A combination of academic and behavior problems were more significantly related to referral than behavior problems alone.

Socio-economic status of the student. The role of a student's socioeconomic status (SES) has been examined in relation to referral judgments (Harvey, 1991), with no differences based on SES being found. These findings are in contrast with those of Low and Clement (1982) who found that SES predicted referral to special education. Coutinho, Oswald, and Best's (2002) research supported that of Low and Clement, finding that poverty is associated with increased risk for a variety of disability conditions, including LD. Thus, there is research that supports the finding that minority groups that experience more poverty than people categorized as White do and these groups might be expected to have more LD referrals and the issue of socioeconomic status should be a factor considered in referrals for special education.

Teacher Efficacy and Referrals

Teacher self-efficacy has also been identified as having a significant impact on whether or not a child is referred to special education. Teacher efficacy is defined as the conviction that one can successfully bring about a desired outcome in one's students (Gibson & Dembo, 1984). Variables in the mesosystem have been shown to have a direct impact on the efficacy of the classroom teacher (Hoy & Woolfolk, 1993).

The first apparent study exploring the relationship between teacher self-efficacy and referral to special education was conducted in the Netherlands (Meijer & Foster, 1988). These researchers surveyed 241 primary teachers, receiving 230 completed surveys back. Participants received a 7-page booklet of materials addressing student cases, teacher characteristics, and problem and referral chances. The design of the study was a between-groups multivariate analysis of covariance on two dependent variables, problem and referral chance. Independent

variables were pupil case characteristics and teacher characteristics. The continuous variables of teacher self-efficacy and years of experience constituted covariates. Correlations between all measures and teacher characteristics were examined. The researchers found that teachers with high personal efficacy were less likely to refer students to special education and that pupils described as having learning problems were more likely to be referred than those pupils with only behavior problems. Students with both behavior and learning problems were the most likely to be referred.

In a study designed to develop an instrument to measure teacher self-efficacy, Gibson and Dembo (1984) determined that teacher self-efficacy can be split into two components: judgment about the likelihood that teaching can affect specific outcomes in students (teaching efficacy) and beliefs about one's own ability to bring about student improvement (personal efficacy). A 30-item questionnaire that took 15 minutes to complete was distributed to 208 elementary teachers in 13 elementary schools. The researchers used squared multiple correlations in the main diagonal of the correlation matrixes communality estimates and used an iteration procedure for improving estimates of communality. In addition to factor analysis and multi-trait-multi-method analysis, the researchers used classroom observation allowing researchers to observe teacher behavior and student response.

The researchers found that teachers with differing levels of self-efficacy differ in classroom practices such as whole-group versus small-group instruction and persistence levels in situations where students encounter difficulty in answering questions. Teachers with low self-efficacy appeared flustered when routines were disturbed. These low self-efficacy teachers had more students off-task throughout the day. Teachers with high self-efficacy used more effective

questioning techniques than teachers with low self-efficacy who often gave little to no wait-time when students could not answer questions correctly.

Gerber and Semmel (1984) noted in their literature review of over a decades' worth of public policy in special education that, although referral implies a judgment, a referral disguises complex variables that influence teachers' emerging judgment of each student's teachabililty and their own perceived limits in dealing effectively with a student experiencing learning and behavior problems. The elementary school teachers in this comprehensive review of the literature felt personal and professional commitment to finding effective solutions when confronted with student problems and thus were likely to attempt substantive pre-referral intervention. The junior high school teachers tended to reflect low persistence and took little personal responsibility for seeking solutions to student problems and made little use of major pre-referral alternatives. Reasons for referrals primarily included poor behavior, need for one-to-one instructional settings, discrepancies between ability and achievement, and academic deficits.

Podell and Soodak (1993) presented six case studies of a hypothetical regular education student with varying socioeconomic status and reading difficulties. Regular education teachers (n = 240) were randomly assigned to one of these cases and were asked to rate the appropriateness of the student's current placement as well as how likely they would be to refer that student to special education. The teachers then completed Gibson and Dembo's (1984) Teacher Efficacy Scale. Results were analyzed using factor analysis, canonical correlation, and regression analysis. Data analyses revealed that teachers who believe their teaching can not influence outcomes are more likely to refer difficult-to-teach students to special education, while those who have greater confidence in their abilities to effect change are more likely to rely on their

own resourcefulness to successfully educate these students in their classroom. These results were consistent with previous findings (Meijer & Foster, 1988).

Podell and Soodak (1993) also found that students with combined learning or behavior problems are more likely to be referred to special education than students with either learning or behavior problems. In addition, their findings related to teaching efficacy as well, leading the researchers to write that "teachers must feel both confident in their own teaching and confident in the effects of teaching in general to agree to retain students with problems in general education" (p.78).

Hughes, Barker, Kemenoff, and Hart (1993) looked at the impact of a number of teacher factors on decisions to refer a child for special education services or to deal with the problem themselves. A total of 55 second through fourth grade teachers were individually interviewed in and presented with 12 problem vignettes common in elementary classrooms. The researchers obtained a measure of teacher perceptions of control by asking them to describe a student engaged in disruptive behavior and explain why the problem was occurring. Teachers believed the problem was either in their control or out of their control. Teaching self-efficacy, the ability to effect student outcomes of teaching, was also assessed.

Hughes et al. (1993) applied two series of discriminant function analyses to determine how well intervention choice could be predicted by ratings of importance of six causal factors or teachers' perceptions of control over the problem and self-efficacy for resolving the problem. Like Poodel and Soodak (1993), Hughes et al. (1993) found that teachers with higher confidence in their ability to resolve problems through their teaching were more likely to handle problems on their own rather than to refer students for special education or seek consultation.

According to Moats and Lyon's (1993) perspective on distinguishing characteristics in the LD field in the United States, teachers refer children for special education assessment based on the teacher's need for additional help with that student at that point in time, rather than on any objective characteristics of the student. Teachers tolerate academic failure, learning difficulties, and low achievement in just as many children whom they may never refer for evaluation or supplementary service, when they believe they are still capable of teaching them. Thus, teachers' assessments of their ability to educate low achieving students are influenced by the rate at which the other students in the classroom are learning. Children are often described as not learning like the rest of the class and, thus, as having a learning disability, a disability most likely associated with differences or deviance from the norm of progress or achievement associated with learning at a particular level (Meyer & Patton, 2001).

Gresham's (2002) recommendations to the President's Commission on Excellence in Special Education addressed the impact that teacher expectations and peer learning abilities have on referral rates. According to Gresham, the decision to complete a referral on a student reflects a problem in person-environment fit relative to teachers' standards and expectations for both academic performance and behavior. The principle guiding the teacher at this step appears to be one of relativity. The question for the teacher becomes, what is the likelihood that he or she will be able to close the gap in achievement relative to a child's peers in both the classroom and at grade level. When the teacher concludes that this gap cannot be substantially narrowed by the teacher, the decision to refer is highly probable (Ysseldyke et al., 1997).

Hoy and Woolfolk (1993) found that organizational characteristics that are associated with student achievement are the same variables that have been shown to correlate with teacher efficacy, including collegial relations and strong principal leadership. In this study, researchers

surveyed 37 elementary schools using a random sample that included 179 teachers. Hoy and Woolfolk concluded that it was important to develop a healthy school in which all involved, from students to teachers and administrators, worked in unison towards the school's mission. These researchers also found schools with high goals, orderly and serious environments, and influential principals, but not necessarily higher morale, had more efficacious teachers than other schools. They thought that there is a reciprocal relationship between teacher efficacy and the school organization but high morale did not necessarily translate into increased confidence in working with students. Therefore, a healthy school climate appears to foster a teacher's self-efficacy and this may be perceived as a more positive work environment (Hoy & Woolfolk, 1993).

Summary of the Literature

This chapter described the importance of conducting further research in the mesosystem. The literature suggests that there are four layers that impact referrals to special education: the microsystem (teachers and students), mesosystem (schools and administration), exosystem (districts and society), and macrosystem (laws and policy) (Brofenbrenner, 1977). Policymakers, community members, families, principals, staffs, students, and teachers all exist at different levels where they are affected by various influences impacting their decision-making. Studies directly link teachers and individual referral behaviors (Drame, 2002; Hill et al., 1999; Podell & Soodak, 1993).

Less clear are the concerns regarding school patterns of referrals. There have been studies (Goddard et al., 2000) regarding school climate and collective efficacy related to student achievement, but no studies have looked at the larger implication of school or mesosystem factors and special education referrals. The past three decades of research have examined the role

that teacher factors play in the referral process; as of yet, there have been no comprehensive examinations of the school or mesosystem that incorporate all the aspects of the various influences in the ecological framework in the context of a school environment. In light of the rising trend toward referrals to special education (Gresham, 2002), it seems imperative to look at how schools are operating as units rather than teachers as individuals. School leaders need to have the information that will have the greatest impact on school practices.

This study provided information that may be able to change school practices and influence referrals to special education. The focus of this study addressed several issues mentioned in the research: How does school organizational health correlate with the number of students referred to special education in a given school and how does collective teacher efficacy correlate to the number of students referred for special education services?

CHAPTER THREE

Research Methodology

The purpose of this study was to determine the relationship between school health and collective efficacy to elementary schools' learning disability prevalence rates. This chapter first identifies the purpose and research questions of the study, followed by an explanation of the research design. The next section provides information about the population and sample selected and discusses the two instruments chosen for the survey. Finally, this chapter summarizes the data collection and data analysis procedures followed by the timeline of the study.

Purpose of the Study and Research Questions

The research question of interest for this study explored and characterized the extent of the relationship between collective teacher efficacy, school organizational health, and the prevalence rate at which students are identified for learning disability services in elementary schools. The next section will describe the research questions.

Research Questions

The following research questions were tested to determine the relationship of collective teacher efficacy and organizational health to the LD prevalence rate of students in elementary schools.

(a) Exploration of the relationship between school organizational health and number of students referred for special education services.

School climate is believed to interact with organizational variables within the mesosystem to produce a measurable working climate (Halpin & Croft, 1963), something these

researchers wanted to both define and measure as dimensions of organizational climate. Tagiuri (1968) later conceptualized the social system as a dimension of climate because it refers to a pattern of relationships that is present between both individuals and groups in an organization. Researchers (Hoy et al., 1991) followed by describing the organizational climate of a school as a set of internal characteristics that makes the school unique. Organizational climate was viewed using a personality metaphor, in which the researchers analyzed the openness of the organization and, to use a health metaphor, they examined the general well being of interpersonal relationships in the organization. As a result, a new measure of school health was developed for elementary schools (OHI-E) where Hoy et al. defined organizational climate as one in which a

> teachers' perceptions of their general work environment; it is influenced by the formal and informal structures of the school as well as the personalities of the teachers and the leadership behavior of the principal. Put simply, the set of internal characteristics that distinguishes one school from another and influences the behavior of teachers is its organizational climate. (p.155)

Hoy et al. recommended continued study of relationships between climate and variables affecting decision-making and social interactions.

The OHI-E measures certain aspects of climate in elementary schools (Hoy et al., 1991). These elements are located in the mesosystem and affect teachers' decisions to refer students to special education. Therefore, study of the relationships between school health and special education referrals is recommended to determine what aspects of the mesosystem are directly related to teachers' decisions to refer students for special education were studied.

(b) Exploration of the relationship between collective teacher efficacy and number of students referred for special education services

Research on collective efficacy suggests that individual teacher self-efficacy is higher at schools where the collective efficacy of the school is higher. Therefore, if a highly efficacious teacher is surrounded by colleagues that do not share the same beliefs of self-efficacy, the likelihood of that teacher maintaining high effectiveness is not as strong as if that teacher was on a staff that collectively shared the same efficacious belief system (Goddard & Goddard, 2001). These researchers also found that schools where teachers' conversations dwelled on the insurmountable difficulties of educating their students were likely to undermine teachers' individual self-efficacy resulting in a greater chance of student behavior problems and failures.

This was even more pronounced for novice teachers as they socialized in the teaching profession (Tschannen-Moran & Barr, 2004). With a great deal of research connecting teacher self-efficacy and special education referrals (Abidin & Robinson, 2002; Andrews et al., 1997; Brownell & Pajares, 1999; Ysseldyke, Christenson et al., 1983), additional research at the mesosystem level should help to identify those elements that impact a school's collective efficacy which may be affecting a school's LD prevalence rate.

Summary of Measures

This study attempted to determine if a relationship exists among LD prevalence rates in schools, collective teacher efficacy using the Organizational Health Inventory, and the Collective Efficacy Scale. Further analyses were performed to determine if the OHI-E and the CE-Scale, in combination with other predictive variables, could find trends in the presented data.

Population and Sample

This study was conducted in a large suburban school system in the state of Virginia with a 2005 enrollment of 166,072 students. This district consists of 136 elementary schools (primarily grades K-6), 22 middle schools, and 25 high schools. The student population represents diversity in ethnicity, language, and socio-economic status with students who speak more than 100 native languages. More than 30,000 (18%) of the students receive free or reduced lunches. In FY 2005, one out of every seven students received special education services and, in FY 2004, the county had 3,711 referrals for special education evaluation. Expectations for the school system are high, with 93% of high school graduates continuing in some form of postsecondary education.

The school system requires anonymity for all research studies within its jurisdiction. Therefore, the names of the school division, individual schools, and participants in this study were coded with letters to maintain confidentiality. No identifying information on the school division or any individual schools were entered in the study database. All data summaries included masked school names (e.g., School 1, School 2, etc.).

The populations for this study were ten purposively selected elementary schools in a Northern Virginia public school district system. Although middle and high schools could have been a source of referrals in the county, the scope of this survey was designed to address prevalence rates in the elementary schools. Future studies should examine variables in the middle and high school setting.

The ten elementary schools were selected using purposive sampling. According to Babbie (1990), purposive sampling is a type of non-probability sampling in which the researcher selects

a sample on the basis of personal knowledge of the population and the nature of the research aims. In this study, every elementary school in the selected school system had data accessible to the researcher on each schools' LD prevalence rate and the schools for this study were selected to represent a range of LD prevalence rates. Rates in some schools are as low as 2% to as high as 8% in other schools. The economic status of each school was also taken into consideration when asking a school to participate. The unit of analysis was the school and, for additional analyses, the teachers.

The criteria for school participation in this research study were that participating schools (a) were elementary schools in the selected district, (b) had an LD prevalence rate in the predetermined range of investigation, and (c) were willing to participate in the proposed study. The participants for this study were limited to teachers and instructional staff who worked in the selected elementary schools.

Data Collection Procedures

The Office of Research, Testing, and Program Evaluation approved this research study in February 2006 which allowed this researcher to gain entry to the schools. A county sponsor was assigned to assure ethical research was conducted under the supervision of the Office of Research, Testing, and Program Evaluation.

Principals of twelve elementary schools were contacted to enlist school support for the research project. Each principal was sent a personal email asking for their support. A copy of the county approval letter, the Collective Teacher Efficacy Scale and the Organizational Health Inventory for Elementary Schools were attached to each email. Of the twelve contacted, ten principals readily agreed to have their schools involved in the project, one school agreed but had

a conflict with the timeline, and one principal did not agree stating that she believed her staff was too taxed with other obligations to participate. The participating principals faxed or emailed staff lists to the researcher in order to set up Survey Monkey profiles for each school. Since Survey Monkey, an online survey instrument, was used to collect the data, the researched wanted to ensure that every principal sent an email to the school's staff prior to the survey mailing, notifying their staffs that this was an approved survey. In addition, teachers were given an added incentive for participating: If their school reached an 80% or greater return rate, KrispyKreme donuts would be provided for the entire staff.

In early March, an email from Survey Monkey was sent to staff at all ten elementary schools from this researcher. The email provided a link for each participant to a site for the survey, which consisted of the Collective Teacher Efficacy Scale and the Organizational Health Inventory for Elementary Schools in addition to four additional questions. The email contained the name of their principal and stated that it was an approved county survey. The email stressed that the survey was anonymous and described how numbers were assigned to email addresses to ensure confidentiality. County email addresses for the participants were used because permission was granted from the county which aided in swift data collection from participants.

The selected participants were instructed to click on the link in their emails and read instructions needed to complete the 10-15 minute on-line survey. The instructions also explained that after participants had finished the survey, they were to hit the submit button which would download their results to an online database. Respondents were not able to retrieve the survey after hitting the submit button. Non-respondents were sent a follow-up email one week after the first mailing and a final reminder the night before the deadline. Survey Monkey, the contracted

online survey company, kept track of non-respondents. The final email stated how many more respondents were needed to earn the school the donut incentive.

Results using this combined method of principal support and staff incentive proved to be rewarding. In less than two weeks, nine of the schools surveyed had at least an 80% or greater return rate. Donuts, the promised incentive, will be delivered to staffs after the dissertation defense. School results will also be provided to each participating principal.

Limitations

There were limitations to the study. First, due to the population and the sampling method, the results of the research were limited to the ten schools included in this study and cannot be generalized to other elementary schools outside of the Northern Virginia region. Second, since LD prevalence rates were based on fall 2005 data and schools responded to surveys in March 2006, some schools may have a lower prevalence rate since many referrals occur in the spring. Furthermore, there are four levels of variables that influence referrals to special education; this study attempted only to look closely at one aspect, the mesosystem, and its relationship to the referral process. Finally, schools had the option of not participating in the study and it I possible that the best participants for this study may have declined to participate.

Instruments

The development of the 21-item Collective Teacher Efficacy Scale included several phases. Scale development began initially by modifying items from the original Gibson and Dembo (1984) teacher self-efficacy scale to reflect collective efficacy (i.e., changing the object of the efficacy items from “I” to “We”). Next, additional items were written in response to a

review by a panel of experts with experience in teacher efficacy research. Following this review, the items were subjected to a field test and then a pilot test with 46 teachers in 46 schools (one teacher from each school). Results from the pilot study suggested that the 21 items offered a valid and reliable measure of collective efficacy (Goddard et al., 2000).

The 12-item Collective Teacher Efficacy Scale was originally developed for two reasons. In the original 21-item scale, the categories of perceived group competence and perceived task analysis were not equally weighed. A goal of the researchers was to achieve a balance across categories in a more economical fashion. The 12-items that were selected for the short form proportionally reflected all dimensions of the original scale. A one-factor solution was extracted explaining 64.1% of the variance. The 12-item scale yielded scores with high internal reliability ($\alpha = .94$). Finally, "scores from the 12-item scale and the 21-item scale were highly correlated ($r = .983$)"(Goddard, 2002). This verified that both the 21-item and the 12-item instrument measure the same thing.

The 37-item Organizational Health Inventory for Elementary Schools measures the health of a school. The healthy elementary school is a pleasant place. It is protected from unwarranted intrusion (institutional integrity). Teachers like the school, the students, and each other (high teacher affiliation). They see the students as diligent in their learning (high academic emphasis). They see the principal as their ally in the improvement of instruction; the principal is approachable, supportive, considerate, yet establishes high standards of teacher performance (high collegial leadership). Teachers rely upon the principal to foster a structure in which learning can take place and, at the same time, to be a leader sensitive to the social and emotional needs of the group. The principal has influence with organizational superiors and is seen by the

teachers as someone who can deliver, especially the teaching resources they need (high resource influence) (Hoy et al., 1991).

The healthy school has no need to coerce cooperation; it is freely given by professionals who are in basic agreement about the task at hand (Hoy et al., 1991). An unhealthy school, by way of contrast, is a rather sad place. The school is an arena for various pressure groups to work out their own agendas (low institutional integrity). The principal is inactive and ineffective in moving the school toward its goals or in building a sense of community among the teachers (low collegial leadership). The principal has no influence with superiors, and teachers see themselves on the short end of supplies (low resource influence). They feel they do not have what they need to teach. The teachers do not like one another, the school, or the students (low teacher affiliation). They see students as academically unworthy; in the view of the teachers, these children do not work hard, do not do their homework, are hard to work with in class, and are not serious about learning (low academic emphasis) (Hoy et al., 1991).

In all likelihood, the unhealthy school is not capable of adapting to the environment because there is no central leadership. The school is turned into a political arena as it loses its institutional integrity. The principal abdicates, in effect, and goals are compromised. Teachers lose a sense of integration with the school and its mission and see students as unwilling learners (Hoy & Woolfolk, 1993).

The Organizational Health Inventory for Elementary Schools states that, with respect to leadership, both consideration and initiating structure combine to form a factor called collegial leadership. Resource support and principal influence combine to form a factor called resource influence. Principal behavior describes the principal's efforts to influence superiors so that teachers have the materials they feel they need to carry out their tasks (Hoy & Woolfolk, 1993).

Content Validity and Reliability

Criterion-related validity, predictive validity, and reliability of scores on the Collective Teacher Efficacy Scale were tested in a comprehensive sample consisting of 452 teachers in 47 randomly selected elementary schools in a large urban district in the Midwest. At the school level, the 21 collective efficacy items were submitted to a principal axis factor analysis. All items loaded strongly on a single factor and explained 57.89 percent of the item variation. The α coefficient of reliability was strong (.96) (Goddard et al., 2004).

Criterion-related validity of the Collective Teacher Efficacy scores was tested in several ways. The criterion variables examined were personal teaching efficacy (Hoy & Woolfolk, 1993), faculty trust in colleagues (Hoy & Kupersmith, 1985), and environmental press (Hoy & Sabo, 1998). Personal teaching efficacy is a measure of a teacher's self-perceptions of capability to educate students. It was predicted that, when aggregated to the school level, teachers' perceptions of personal efficacy would be moderately and positively related to collective teacher efficacy; a high correlation was not expected because personal and collective teacher efficacy have different referents (self versus group). Moreover, the collective teacher efficacy measure directly assesses perceptions of both perceived competence and task whereas the personal teacher efficacy measure includes only items about competence. As predicted, there was a moderate and positive (r = . 54, p < .01) correlation between personal teacher efficacy aggregated at the school level and collective teacher efficacy (Goddard et al., 2000). A positive relationship between faculty trust in colleagues and collective teacher efficacy was predicted and, similar to the pilot results, trust in colleagues was positively and significantly related to collective teacher efficacy (r = .62, p < .01).

As a test of predictive validity, researchers employed hierarchical linear modeling to show that scores on the collective efficacy scale were significant predictors of the mathematics and reading achievement (measured by the Metropolitan Achievement Test, 7th edition) of 7016 2nd, 3rd, and 5th grade students who attended the 47 sampled schools. Taken together, these results provide content, criterion-related, and predictive validity evidence for scores on the collective efficacy scale as well as strong reliability evidence (Goddard et al., 2000).

The Organizational Health Inventory for Elementary Schools was piloted in three studies. In the first pilot, the secondary version of the OHI-E was reviewed to make it a more appropriate measure of the health of the elementary school. Old items were modified or deleted and new items created depending upon how well the item was judged to discriminate in describing some element of life in the elementary school. The new items were consistent with the original criteria used in the development of the OHI-E. Each item reflected a property of the school: The statement was clear and concise, had content validity, and had discriminatory potential. This preliminary elementary version was given to a sample of 131 elementary teachers. This pilot study was used as a coarse screen to reduce and refine the items to be used in the development of a final version of the OHI-E. The scores of individual teachers were used to represent the typical response expected for teachers in their schools.

Factor analysis of the data from this sample identified eight factors. Academic emphasis separated into two subtests: teachers' academic orientation and students' academic orientation. These were the weakest of the health dimensions and neither scale had a reliability coefficient above .60; however, the two subtests were combined and had a α coefficient of .69. On balance, the final seven factors were defined by a set of 40 items and each factor had sufficient reliability (resource support = .92; institutional integrity = .85; consideration = .88; morale = .91; initiating

structure = .78; principal influence = .77; and academic emphasis = .69) to proceed to the next step of development. Because of the conceptual ambiguity of the academic emphasis dimension and its low reliability, seven new items were developed to measure academic emphasis of elementary schools.

Two new items were also added to bolster the morale and consideration subtests. Only items that loaded high on one factor and relatively low on all others were retained. Items were evaluated for conceptual clarity and fit; that is, items were retained only if they were judged to be valid measures of the subtest. The remaining items in the inventory were based on both conceptual fit and empirical results. School means were calculated for each item and the item-correlation matrix from the 78 schools was factor analyzed. Factor analysis of this combined data set revealed five factors that explained about 61% of the variance: The original seven factors of the OHI-E collapsed into five factors in this investigation of elementary schools. The construction of the five factors was guided by the factor eight values (an index of contribution of each factor), the reliability score of each factor, and the conceptual appropriateness of each item on the dimension. The number of items and reliability coefficients for each subtest are summarized in Table 1 below.

Table 1

Item Reliability (n = 37) (Hoy et al., 1991)

Item	α Coefficient
Teacher Affiliation	9.93
Integrated Leadership	10.95
Resource Influence	7.89
Institutional Integrity	6.89
Academic Emphasis	5.84

Scoring

Collective efficacy. The 12-item Collective Teacher Efficacy Scale (Short Form) developed by Goddard (2002) is used to assess collective teacher efficacy. The blueprint for this 12-item scale is the 21-item Collective Efficacy Scale (Goddard et al., 2000). The 12-item scale consists of Likert-type items that teachers rate from 1 (strongly disagree) to 6 (strongly agree) to indicate their level of agreement with each individual statement. Two factor scores, perceptions of perceived group competence and perceptions of perceived group task analysis, are tallied for each participant based on the factor structure of the instrument's author. Factor I, perceived group competence (e.g., "Teachers in this school are able to get through to the most difficult students"), includes six items (Items 1, 2, 3, 4, 5, and 9); Factor II, perceived group task analysis (e.g., "These students come to school ready to learn"), includes six items (Items 6, 7, 8, 10, 11, and 12). Six of the items in this scale are reversed scored (e.g., 1 is scored 6, 2 is scored 5, etc.). For example, the item "If a child doesn't want to learn teachers here give up" is scored in reverse. Thus, a strongly agree 6 would be scored 1, suggesting low self-efficacy. To score the

scale, the following three steps are needed: First, scores on the items 3, 4, 8, 10, 11, and 12 are reversed. Then the scores for all 12 items are added together and the greater the sum, the higher the collective efficacy. Last, all the individual teachers scores are averaged to find a collective efficacy score for the school.

The Organizational Health Inventory for Elementary Schools OHI-E. The items are scored by assigning 1 to "rarely occurs," 2 to "sometimes occurs," 3 to "often occurs," and 4 to "very frequently occurs." When an item is reversed scored, "rarely occurs" receives a 4, "sometimes occurs" a 3, and so on. Each item is scored for each respondent and an average school score for each item is computed by averaging the item responses across the school because the school is the unit of analysis. Table 2 describes the process in detail.

Table 2

Steps in Scoring the OHI-E

Step	Instructions
Step 1	Score each item for each respondent with the appropriate number (1, 2, 3, or 4). Be sure to reverse score items 6, 8, 14, 19, 25, 29, 30, 37.
Step 2	Calculate an average school score for each item. Round scores to the nearest hundredth. This score represents the average school item score. There should be 37 school item scores before proceeding.
Step 3	Sum the average school item scores as follows: Institutional Integrity (II) = 8+14+19+25+29+30 Collegial Leadership (CL) = 1+3+4+10+11+15+17+21+26+34 Resource Influence (RI) = 2+5+9+12+16+20+22 Teacher Affiliation (TA) = 13+23+27+28+32+33+35+36+37 Academic Emphasis (AE) = 6+7+18+24+31*

*These five scores represent the health profile of the school. Each school score is then standardized. The current database on elementary schools is drawn from a large, diverse sample of schools in New Jersey.

The average scores and standard deviations for each health dimension are summarized in Table 3 below.

Table 3

Standardized Scores OHI-E

Dimension	Mean (M)	Standard Deviation (SD)
Institutional Integrity (II)	16.06	2.77
Collegial Leadership (CL)	24.43	3.81
Resource Influence (RI)	20.18	2.48
Teacher Affiliation (TA)	26.32	2.98
Academic Emphasis (AE)	14.66	1.59

Convert the school subtest scores to standardized scores with a mean of 500 and a standard deviation of 100, which we call SdS score. Use the following formulas:

SdS for II=100(II-16.06)/2.77+500

First compute the difference between a school score on II and the mean for the normative sample (II-16.06). Then multiply the difference by one hundred [100(II-16.06)]. Next divide the product by the standard deviation of the normative sample (2.77). Then add 500 to the result. This results in the computed standardized score (SdS) for the institutional integrity subscale.

Repeat the process for each dimension as follows:

SdS for CL=100(CL-24.43)/3.81+500

SdS for RI=100(RI-20.18)/2.48+500

SdS for TA=100(TA-26.32)/2.98+500

SdS for AE=100(AE-14.66)/1.59+500

This standardizes a school's scores against the normative data provided in the New Jersey sample. For example, if a school score is 400 on institutional integrity, it is one standard deviation below the average score on institutional integrity of all schools in the sample; that is, the school has more institutional integrity than only 16% of the other schools. . The range of these scores is presented below:

If the score is 200, it is lower than 99% of the schools.

If the score is 300, it is lower than 97% of the schools.

If the score is 400, it is lower than 84% of the schools.

If the score is 500, it is average.

If the score is 600, it is higher than 84% of the schools.

If the score is 700, it is higher than 97% of the schools.

If the score is 800, it is higher than 99% of the schools.

An overall index of school health can be computed as follows:

$$\text{Health} = \frac{(\text{SdS for II})+(\text{SdS for CL})+(\text{SdS for RI})+(\text{SdS for TA])}+(\text{SdS for AE})}{5}$$

This health index is interpreted the same way as the subtest scores, that is, the mean of the "average" school is 500. Thus, a score of 650 on the health index represents a very healthy school just as a score of 350 depicts an unhealthy school climate. Most school scores, however, fall between these extremes and can only be diagnosed by carefully comparing all elements of the health inventory. The numbers have been changed into categories ranging from high to low by using the following conversion table (Hoy et al., 1991):

Above 600 VERY HIGH

551-600 HIGH

525-550 ABOVE AVERAGE

511-524 SLIGHTLY ABOVE AVERAGE

490-510 AVERAGE

476-489 SLIGHTLY BELOW AVERAGE

450-475 BELOW AVERAGE

400-449 LOW

Below 400 VERY LOW

Analytic Procedures

Demographics and background characteristics were summarized overall and by school, as appropriate. The following variables were summarized at the school level: years in the building (teacher), total years of teaching experience (teacher), student-teacher ratio (school), schools' socio-economic level (Title I – school %), LD Prevalence rate by school (school %), and schools' diversity (LEP status - school %).

The primary measures of teacher efficacy, organizational climate, and prevalence rates were summarized by school. Differences among schools with regard to baseline measures of teacher efficacy and organizational health, as well as other baseline variables of interest (e.g., number of students per class, socio-economic status) were summarized. Differences among schools with regard to key baseline measures were further examined using ANOVA and resulting differences among means were explored using the Tukey HSD test with associated 95% confidence intervals. For all results, mean and standard deviation were used to summarize continuous parameters and numbers (percentage) were used to summarize categorical

parameters, as appropriate. Relationships between the primary variables of interest, correlations between the primary measures of teacher efficacy and organizational health, and LD prevalence rate were summarized using Pearson's product-moment correlation coefficient (for parameters assessed using interval scale) to inform future model selection.

A general linear model was developed to answer the following research questions: (a) Can measures of school organizational health be used to predict the number of students that a teacher refers for special education and (b) Can measures of collective teacher efficacy be used to predict the referral rate of students for special education? One model of the form $Y_{ij} = b_o + b_1X_1 +... + b_kX_k + e$ was developed to evaluate each question. In both models, the dependent variable of interest was the mean number of total referrals within a school. An additional model using a composite measure of health and efficacy was also explored.

For model (a), the explanatory variable of interest was the OHI-E for school organizational health, as described above. Additional variables of interest, to be included in initial modeling, were: teaching years, years in building, staff size, socio-economic status of students, school diversity, and Title I status. For model (b), the explanatory variable of interest was the CE-S scale for collective teacher efficacy. Additional variables of interest to be included in initial modeling were: years teaching, years in building, class size, socio-economic status of students, school diversity, and Title I status. Examination of the residuals was performed to confirm the linearity of the model.

CHAPTER FOUR

Data Analysis

This study was designed to examine the organizational health and collective efficacy of ten elementary schools in Virginia and investigate how the identified mesosystem variables relate to a school's learning disabilities prevalence rates. The study also examined additional school variables (i.e., years teaching, years in building, poverty, LEP, teacher/student ratio, Title I status) and their relation to LD prevalence rate. The school was the unit of measure for some analyses and teachers were the unit of measure for other analyses. Teachers at participating schools completed on online questionnaire consisting of four demographic questions, the Organizational Health Inventory for Elementary Schools (OHI-E), and the Collective Efficacy Scale (CE-Scale).

The study posed two research questions. The first question was: How does school organizational health correlate with the number of students referred to special education in a given school? The second research question was: How does collective teacher efficacy correlate to the number of students referred for special education services?

Factor Analysis of Instruments

Table 4 confirms that the Collective Efficacy (CE) items created three factors. The item names are in the first column. The next three columns are factor loadings. Factor loadings less than .10 are suppressed, which is why there are two blank cells in the chart. Each item was reviewed to see where it had the highest factor loading, which confirmed where the factor

belonged. When an item loaded fairly highly on more than one factor, the individual item was reviewed to see exactly where it theoretically belonged.

Factors broke into CE2, CE3R (which was CE3 recoded), CE9, CE1, CE6, CE4R, CE10R, CE8R, CE5, and CE7; all seem to be loading on the same factor. CE12R and CE11R could constitute a factor of their own, however, the difference between the loadings for these items on Factor 1 and 2 were slight. Both were theoretically and practically aligned with the way the scale was constructed and the results that the original developers of the scale (Goddard et al., 2000) had expected: All of these items fall onto one single factor.

Table 4

Factor Matrix: Collective Efficacy Scale

Questions	Factor 1	Factor 2	Factor 3
CE2	.732	-.338	-
CE3R	.693	-.313	.249
CE9	-.670	.251	-.148
CE1	.660	-.271	-
CE6	.658	.101	-.486
CE4R	.651	-.302	.238
CE10R	-.627	-.222	.292
CE8R	.623	.128	-.295
CE5	.621	-.404	.157
CE7	.573	.250	-.517
CE12R	.619	.669	.393
CE11R	.623	.668	.386

As can be seen in Table 5, Factor 1 accounts for 41.87% of the variance. The second factor accounts for 13.62% of the variance and, when added together, both account for 55.49% of the variance. As an estimate of validity, it is clear that the scale does measure what it was intended to measure, because the items clumped together on the same factor, an indication of validity.

Table 5

Total Variance Explained

	Initial Eighenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% Variance	Cumulative %	Total	% Variance	Cumulative %
1	5.025	41.873	41.873	5.025	41.873	41.873
2	1.635	13.623	55.496	1.635	13.623	55.496
3	1.145	9.539	65.035	1.145	9.539	65.035
4	.817	6.811	71.847			
5	.721	6.011	77.857			
6	.555	4.623	82.480			
7	.509	4.240	86.720			
8	.459	3.827	90.548			
9	.414	3.447	93.994			
10	.370	3.082	97.076			
11	.341	2.838	99.915			
12	1.025E-02	8.543E-02	100.000			

Tables 6 and 7 indicate that Cronbach's alpha, a measure of reliability, was .6598. The reliability might have been higher if item 9 and/or item 10 were deleted. Item 9 stated, "Teachers

in this school do not have the skills to deal with disciplinary problems", and item 10 stated, "The opportunities in this community help ensure that these students will learn". Both items required respondents to rate colleagues and the community in areas in which they might not have had the most knowledge or dealt with behavior issues and community opportunities, other areas where knowledge may have been lacking. The scale in this study had a stronger reliability quotient than that reported by the scale's creators (.983) (Goddard, 2002).

Table 6

Reliability Analysis Scale (alpha) (n = 490.0)

Mean	Variance	Standard Deviation	Variables
51.2633	31.2946	5.5942	12

Table 7

Item-total Statistics: Reliability Coefficients, n = 12, alpha = .608, Standardized alpha = .6598

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
CE1	46.9429	24.8025	.5077	.4411	.5355
CE2	46.5959	25.1983	.5942	.5365	.5298
CE5	46.1694	25.6461	.4343	.4059	.5521
CE6	47.4592	23.8194	.5291	.4555	.5244
CE7	48.4490	24.3542	.4134	.3843	.5497
CE9	48.9408	38.0640	-.5696	.4061	.7380*
CE3R	46.0939	25.6762	.5126	.4876	.5427
CE4R	45.9878	26.2412	.4823	.4126	.5510
CE8R	46.8347	24.9113	.4710	.3890	.5417
CE10R	48.2571	38.3141	-.5596	.3771	.7459*
CE11R	46.0776	24.8774	.5190	.9797	.5347
CE12R	46.0878	24.8941	.5153	.9796	.5353

* 2 significant digits

Factor Analysis on the Organizational Health Inventory – Elementary Scale

In Table 8, the Organizational Health Inventory – Elementary Scale broke into two, strongly loaded factors, with some factors (e.g., OH37R, OH9, OH6R) also loading nearly as strongly with either the first or the second factor.

Table 8

Factor Matrix on the Organizational Health Inventory – Elementary Scale

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
OH27	.809		.200	-.133	-.134		
OH28	.800		.226	-.111			
OH35	.790	.144	.183		-.183		-.154
OH21	.780						
OH11	.756		-.243	-.244		-.117	
OH15	.738				-.121		
OH1	.735		-.362	-.124			.101
OH32	.727		.233	-.130			
OH26	.725		-.268	-.129		-.205	
OH3	.718		-.278	-.118			
OH10	.716		-.362	-.141		-.108	-.125
OH4	.702		-.411	-.225		-.107	
OH34	.702		-.312	-.197		-.202	-.105
OH17	.674		-.182				
OH36	.660		.314		-.158		-.135
OH13	.656	.155	.366		-.356	.109	
OH22	.651	-.175		.489			
OH12	.649	-.141		.539			
OH23	.641	.143	.393		-.355		
OH20	.639	-.218			.165	.469	
OH33	.614	.138	.237		.117		
OH2	.592		-.172	.113	.148	.513	.107
OH18	.564	-.110	.322		.149		
OH31	.562	-.159	.350	-.154	.352		
OH5	.542	-.131	-.161	.539		-.115	
OH7	.487		.328		.259	-.141	.317
OH24	.472	-.284	.293	-.114	.267	-.166	
OH30R	.248	.690			.176		
OH29R		.674	-.101	.171	-.158		.358
OH19R		.609			.352		-.385
OH14R	.174	.602	-.153	.117			.402
OH25R		.586					-.243

(table continues)

Table 8 *(continued)*

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
OH8R	.273	.562			.448		-.287
OH16	.604	-.190		.618		-.159	
OH6R	.256		.287	-.181	.470		.314
OH37R	.297	.361	.235		-.405	.137	.215
OH9	.510	-.237	-.126		.168	.596	

a 7 components extracted.

In Table 9, factor analysis of this combined data set indicated that five factors explained approximately 58% of the variance as similar to 61% found by the authors (Hoy et al., 1991).

Table 9

Total Variance Explained

Component	Initial Eigenvalues			Extraction of Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.314	35.985	35.985	13.314	35.985	35.985
2	2.891	7.814	43.799	2.891	7.814	43.799
3	2.093	5.657	49.456	2.093	5.657	49.456
4	1.639	4.429	53.885	1.639	4.429	53.885
5	1.524	4.120	58.005	1.524	4.120	58.005
6	1.133	3.063	61.068	1.133	3.063	61.068
7	1.020	2.756	63.823	1.020	2.756	63.823
8	.914	2.471	66.295			
9	.860	2.324	68.619			
10	.733	1.982	70.601			
11	.713	1.928	72.529			
12	.656	1.774	74.303			
13	.641	1.733	76.036			
14	.611	1.651	77.687			
15	.588	1.589	79.276			
16	.534	1.442	80.718			
17	.516	1.394	82.112			
18	.503	1.359	83.471			
19	.482	1.303	84.773			
20	.465	1.258	86.031			
21	.450	1.217	87.248			
22	.434	1.173	88.422			

(table continues)

Table 9 *(continued)*

	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
23	.401	1.084	89.506			
24	.377	1.019	90.525			
25	.370	1.000	91.525			
26	.362	.977	92.502			
27	.334	.902	93.404			
28	.326	.880	94.285			
29	.314	.848	95.132			
30	.298	.805	95.937			
31	.258	.696	96.633			
32	.253	.683	97.316			
33	.239	.646	97.962			
34	.219	.593	98.555			
35	.204	.551	99.106			
36	.185	.499	99.604			
37	.146	.396	100.000			

Table 10 below and Table 11 on the next page both indicate reliability (.9399) in the Organizational Health Inventory – Elementary Scale. One reason why this scale appears to be so much higher than the twelve item Collective Efficacy scale may possibly be because the scale contains 37 items, as opposed to 12 on the Collective Efficacy scale.

Table 10

Reliability Analysis Scale I - Alpha (n = 488.0)

Statistics for Scale	Mean	Variance	Std Dev	Variables
	112.1332	264.6865	16.2692	37

Table 11

Reliability Analysis Scale II (Alpha) -Item-total Statistics (Alpha = .9394, Standardized item alpha = .9399)

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
OH1	109.2582	244.6067	.7051	-	.9361
OH2	109.3156	250.5491	.5515	-	.9376
OH3	109.0848	246.0648	.6807	-	.9364
OH4	108.8709	247.0983	.6595	-	.9366
OH5	108.6844	252.9557	.4936	-	.9381
OH7	109.0348	254.9413	.4546	-	.9384
OH9	109.8176	253.9728	.4492	-	.9384
OH10	109.1762	244.1660	.6721	-	.9364
OH11	109.1475	241.6332	.7258	-	.9358
OH12	108.7869	250.9771	.5989	-	.9373
OH13	108.9488	249.7653	.6263	-	.9370
OH15	108.9406	246.0601	.6929	-	.9363
OH16	108.7234	252.3689	.5476	-	.9377
OH17	109.1783	248.4178	.6248	-	.9369
OH18	109.2336	252.5531	.5124	-	.9379
OH20	109.4795	250.3897	.5780	-	.9374
OH21	108.9652	244.9536	.7298	-	.9359
OH22	108.8975	250.1250	.5925	-	.9373
OH23	108.8094	250.4872	.6103	-	.9372
OH24	110.2131	254.8169	.4003	-	.9388
OH26	108.9693	245.1017	.6869	-	.9363
OH27	108.9488	244.5046	.7684	-	.9356
OH28	109.0656	244.7390	.7571	-	.9357
OH31	109.7193	253.0771	.5089	-	.9380
OH32	109.1127	248.7532	.6826	-	.9366
OH33	109.1496	250.4560	.5900	-	.9373
OH34	108.7910	247.7714	.6598	-	.9366
OH35	109.1947	243.2372	.7653	-	.9355
OH36	108.6291	252.8663	.6143	-	.9374
OH37R	108.7336	256.5244	.2995	-	.9398
OH6R	109.4570	258.5033	.2479	-	.9400
OH8R	109.3402	255.1407	.3248	-	.9397
OH14R	109.0184	258.2317	.2271	-	.9404
OH19R	109.0820	259.9809	.1531	-	.9412
OH25R	109.2992	264.7686	-.0293	-	.9430
OH29R	108.8689	260.3688	.1303	-	.9415
OH30R	108.8504	255.8646	.3132	-	.9397

Population Sample

Twelve schools were contacted to participate, with ten principals volunteering their schools to participate in the study. (School demographics, as well as the survey's return rate, can be found in Table 12). Principals were asked to encourage their teachers to submit the online survey in a timely manner. Information was collected from the teachers over a two-week period of time Additional data in Table 12 shows the number of students per school, number of full-time equivalent teachers (FTE), percentage of poverty including Title I status, LD prevalence rates, and percentage of students who have Limited English Proficiency (LEP).

Table 12

School and Student Demographics

School	Surveys Sent	Surveys Received	Return Rate	Number of Students	FTE Teachers	(%) Poverty * = Title I	LD Prevalence Rate	(%)LEP
1	36	25	70%	304	36	60*	1.64	31
2	60	54	90%	347	38	45*	5.38	42
3	48	47	98%	489	39	22*	3.07	30
5	60	37	63%	542	60	55*	4.43	33
6	62	55	89%	583	49	26	6.69	17
8	69	57	83%	828	65	33	2.21	21
10	43	34	80%	320	36	77*	5.31	52
11	78	65	84%	768	71	30	5.34	24
12	51	48	94%	417	36	29	4.15	28
13	58	68	83%	589	42	11	2.89	10
Total	**565**	**490**	**87%**					

Of the 490 surveys analyzed, 10 schools were represented in the sample. The lowest return rate (63%) was represented from school 5 with the highest return rate (98%) represented from school 3. The overall return rate for this survey was 87%. The Learning Disabilities (LD) prevalence rate of schools ranged from a low in school 1 of 1.64 to a high in school 6 of 6.69. The Limited English Proficiency (LEP) percentage varied by school with a low in school 13 of 10% to a high in school 10 of 52%. The poverty factor also showed a difference in schools with its high in school 10 (77%) to a low in school 13 (11%). The population in the schools varied from a student population in school 1 of 304 students to a high in school 8 of 828 students.

Descriptive Statistics

Tables 13-16 present the data which describes the sample schools with respect to organizational health, collective teacher efficacy, teacher variables (years teaching and years in current school), and teachers' background experiencing in referring students for special education services. Table 13 presents the Organization Health scores of each school by subgroup and overall health score. This health index is interpreted the same way as the subtest scores: The mean of the "average" school is 500; thus, a score of 650 on the health index represents a very healthy school just as a score of 350 depicts an unhealthy school climate. The numbers in Table 13 have been changed into categories ranging from high to low by using the following conversion: above 600 is labeled VERY HIGH, 551-600 is HIGH, 525-550 is ABOVE AVERAGE, 511-524 means SLIGHTLY ABOVE AVERAGE, 490-510 AVERAGE, 476-489 SLIGHTLY BELOW AVERAGE, 450-475 BELOW AVERAGE, 400-449 LOW, and below 400 is VERY LOW.

The overall health of schools in this sample ranged from below average in school 10 (452.18) to very high in school 2 (616.68). Interestingly, upon deeper examination of the results, school 2 actually had a very low rating for Academic Emphasis (283.65) and school 10 had a very high rating or Collegial Leadership (753.54). All schools were either high or very high in the subgroup Institutional Integrity and all schools ranged from low to below average for Academic Emphasis. With regard to Overall Health, schools 8,10, and 12 had health scores below average; school 1 had a health score above average; schools 3, 5, 6, and 11 had a high health scores; and schools 2 and 13 had overall health scores that were very high. Although no schools fell in the unhealthy school range, subgroup scores from schools 8, 10, and 12 fell in that range for Academic Emphasis.

Table 13

Standardized Subscale Scores for Organizational Health by School

School	Institutional Integrity (SdSII)	Collegial Leadership (SdSCL)	Resource Influence (SdSRI)	Teacher Affiliations (SdSTA)	Academic Emphasis (SdSAE)	Overall Health Score
1	611.91	657.74	533.06	553.69	388.05	548.89
2	610.11	753.54	580.24	692.95	446.54	616.68
3	576.90	746.72	533.87	594.97	430.19	576.53
5	587.73	737.01	609.27	602.68	395.60	586.46
6	562.09	649.08	591.53	639.26	462.89	580.97
8	505.42	566.40	472.18	458.05	303.14	461.04
10	667.51	490.29	397.98	421.48	283.65	452.18
11	585.20	695.01	572.18	581.21	389.94	564.71
12	558.12	550.39	440.73	473.15	354.72	475.42
13	602.89	756.96	593.55	636.24	430.82	604.09

As can be observed in Table 14, the mean collective efficacy scores for the ten schools in this sample ranged from 46.33 to 54.93, with 72 being the highest attainable efficacy number and 12 the lowest attainable efficacy number.

Table 14

Summed Teacher Efficacy Measure by School

School	N	Mean	Std. Deviation
1	25	49.96	3.80
2	54	54.93	4.63
3	47	53.66	4.12
5	37	52.24	4.57
6	55	54.78	4.77
8	57	46.33	5.71
10	34	47.53	6.96
11	65	51.26	4.47
12	48	49.40	4.43
13	68	51.12	4.97

Table 15 shows results related to number of years teaching and number of years employed in current school. The means for years experience indicated that each school had a relatively young teaching staff. The mean of years in current school indicated that the schools had high turnover considering the largest mean was 2.50. Organizational Health and CE were determined on schools with relatively young staff in both age and length of employment in the school.

Table 15

Teacher Variables: Descriptive Statistics on Years Teaching, Years in Current School by School

School	Years Teaching (Mean (SD))	Years in Current School (Mean (SD))
1 (n=25)	2.76 (1.27)	1.76 (1.05)
2 (n=54)	2.76 (1.13)	2.50 (1.26)
3 (n=47)	3.19 (1.15)	1.79 (.81)
5 (n=37)	3.05 (1.41)	1.89 (.84)
6 (n=55)	2.67 (1.19)	1.80 (.91)
8 (n=57)	2.68 (1.18)	1.00 (.00)
10 (n=34)	3.00 (1.39)	2.12 (1.25)
11 (n=65)	3.25 (1.24)	2.11 (1.15)
12 (n=48)	2.79 (1.52)	1.69 (1.08)
13 (n=68)	2.99 (1.20)	1.81 (.97)

Table 16 shows the data representing years of teaching as described by respondents. Distributions of years of teaching data were all slightly positively skewed. The largest number of teachers fell into the 12 or more years teaching category, with 4-7 years being the second largest category. Information gathered from Table 16 supported the findings that Collective Efficacy among all categories of teachers except the 4-7 years category, had a negative skew, which translated to an abundance of positive efficacy scores. The 4-7 years category presented a more normal, less positive distribution.

Table 16

Skewness & Kertosis statistics of Teacher Efficacy by Years Teaching

	N	Skewness		Kurtosis	
Years Teaching		Statistic	Std. Error	Statistic	Std. Error
0-3 Years	92	-.560	.251	.499	.498
4-7 Years	101	-.309	.240	-.495	.476
8-11 Years	86	-.497	.260	1.269	.514
12 or more Years	176	-.826	.183	1.488	.364
I am not a teacher	35	-.836	.398	.751	.778

Table 17 provides information regarding the number of teachers per school who, at any given time in their career, have referred a child for special education services. As the table shows, all schools had at least 60% of their staff refer a student for special education services at some time during their teaching career.

Table 17

Referred Child to Special Services by School

School		Frequency	Percent
1	Yes	16	64.0
	No	9	36.0
	Total	25	100.0
2	Yes	32	59.3
	No	22	40.7
	Total	54	100.0
3	Yes	30	63.8
	No	17	36.2
	Total	47	100.0
5	Yes	27	73.0
	No	10	27.0
	Total	37	100.0
6	Yes	36	65.5
	No	19	34.5
	Total	55	100.0
8	Yes	45	78.9
	No	12	21.1
	Total	57	100.0
10	Yes	21	61.8
	No	13	38.2
	Total	34	100.0
11	Yes	46	70.8
	No	19	29.2
	Total	65	100.0
12	Yes	29	60.4
	No	19	39.6
	Total	48	100.0
13	Yes	47	69.1
	No	21	30.9
	Total	68	100.0

Research Question One

The first research question was: How does school organizational health correlate with the number of students referred to special education in a given school (LD Prevalence rate)? Table 18 contains the Pearson correlations depicting the linearity of the relationships between variables contained in the correlation matrix. For some pairs of variables, the linear relationship is well-defined, for others it is not. Other variables in the study were not included in the correlation matrix due to a lack of linear relationships with other variables.

Table 18

Pearson Correlations

		Standardized Institutional Integrity (SdSII)	Standardized Collegial Leadership (SdSCL)	Standardized Resources Influence (SdSRI)	Standardized Teacher Affiliations (SdSTA)	Standardized Academic Emphasis (SdAE)	Overall Health	Mean Efficacy Score
Standardized Institutional Integrity (SdSII)	Pearson Correlation	1	.005	-.097	.044	-.034	.123	.085
Standardized Collegial Leadership (SdSCL)	Pearson Correlation	.005	1	.893**	.902**	.827**	.948**	.750**
Standardized Resources Influence (SdSRI)	Pearson Correlation	-.097	.893	1	.915	.845	.934	.753
Standardized Teacher Affiliations (SdSTA)	Pearson Correlation	.044	.902**	.915**	1	.947**	.980**	.902**
Standardized Academic Emphasis (SdAE)	Pearson Correlation	-.034	.827**	.845**	.947**	1	.924**	.933**
Overall Health	Pearson Correlation	.123	.948	.934	.980	.924	1	.869
Mean Efficacy Score	Pearson Correlation	.085	.750*	.753*	.902**	.933**	.869**	1

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

School Level Correlations Findings

Table 19 shows three correlations that are significant. Two are negative. The first, School Size/LEP, indicated that a higher rate of limited English proficiency is associated with smaller school size. School Size/Standardized Institutional Integrity, the second significant correlation, indicated a higher SdSII is also related to smaller school size. A higher number of FTE teachers is associated with larger school size.

Table 19

School Level Correlational Findings – n=10

		School Size	Number of Full-time Equivalent Teachers	Percent Limited English Proficiency	Standardized Institutional Integrity (SdSII)
School Size	Pearson Correlation	1	.879**	-.656*	-.701*
Number of Full-time Equivalent Teachers	Pearson Correlation	.879	1	-.365	-.511
Percent Limited English Proficiency	Pearson Correlation	-.656	-.365	1	.627
Standardized Institutional Integrity (SdSII)	Pearson Correlation	-.701*	-.511	.627	1

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

Research Question Two

The second research question was: How does collective teacher efficacy correlate to the number of students referred for special education services? Logistic regression was used to calculate the probability of a teacher having made referrals over the probability of a teacher not having made referrals. The results of the analysis were in the form of an odds ratio. Logistic regression does not: assume linearity of relationship between the independent variables and the

dependent, require normally distributed variables, assume homoscedasticity, and, in general, as stringent requirements as other forms of statistics. It does require, however, that observations are independent and that the logit of independent variables is linearly related to the dependent variables. The success of the logistic regression can be assessed by looking at the classification table, showing correct and incorrect classifications of the dichotomous, ordinal, or polytomous dependent numbers. Goodness-of-fit tests, such as model chi-square, are available as indicators of model appropriateness, as is the Wald statistic, to test the significance of individual independent variables (Agresti, 1996).

The goal of logistic regression is to predict correctly the category of outcome for individual cases using the most parsimonious model. To accomplish this goal, a model for the study was created that included all predictor variables that are useful in predicting the response variable. Several different options are available during model creation. Variables were entered into the chosen model in the order specified by the researcher and logistic regression tested the fit of the model after each coefficient was added and deleted, a process known as stepwise regression (Agresti, 1996).

The logistic regression model run in Table 20 was a "forward stepwise" model which took all of the independent variables and looked to see which ones were most predictive of "referral". In this iterative process, the "child referral" variable was designated as the dependent variable. As the independent, or predictor, variable, organizational health variables are not standardized, because, when variables are standardized, variance is reduced (Agresti, 1996). The researcher used the summated teacher efficacy, institutional integrity, collegial leadership, resource influence, teacher affiliations, and academic emphasis scores. Years teaching, years in current school, and school were also added to the model. This iterative process resulted in a

model which contained just two variables as predictors, the years teaching and teacher efficacy scores, as seen in Table 20.

Table 20

Variables in the Equation

	Variable entered on each step	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	YRSTCH			57.371	4	.000	
	YRSTCH(1)	-.678	.296	5.240	1	.022	.507
	YRSTCH(2)	-1.245	.334	13.936	1	.000	.288
	YRSTCH(3)	-1.504	.286	27.697	1	.000	.222
	YRSTCH(4)	1.540	.496	9.651	1	.002	4.666
	Constant	-.377	.126	8.990	1	.003	.686
Step 2	YRSTCH			56.899	4	.000	
	YRSTCH(1)	-.690	.302	5.228	1	.022	.502
	YRSTCH(2)	-1.293	.339	14.564	1	.000	.274
	YRSTCH(3)	-1.545	.290	28.346	1	.000	.213
	YRSTCH(4)	1.488	.502	8.784	1	.003	4.430
	Teacher Efficacy Score	.070	.020	11.899	1	.001	1.072
	Constant	-3.969	1.053	14.208	1	.000	.019

Table 20 shows that, in Step 1, SPSS entered the years teaching scores and found it a significant predictor of "referral" ("Sig." =.000). There were four listed, because, in total, there are five categories in the years teaching variable. The fifth category ("I am not a teacher") is represented by the "constant" row. The significance column in Table 20 refers to the variable; for example, years teaching (overall – the top row) has a Wald statistic of 57.371, which is significant at the $p < .001$ level. The Wald statistic is what is calculated to determine the predictive power of the variable and each value of the Wald statistic has a significance level

associated with it. The larger the Wald value, the more likely it is to be significant (Agresti, 1996) .

In the categories of years teaching, each category has its own Wald statistic and all are significant. The first category of years teaching is associated with a Wald statistic of 5.240, which was significant at the $p < .001$ level. The second category of years teaching was associated with a Wald statistic of 13.936, which was significant at the $p < .001$ level. The third category was associated with a Wald statistic of 27.697, significant at the $p < .001$ level. The last category was associated with a Wald statistic of 9.651 and significant at the $p < .001$ level.

The table 20 Exp(B) column is similar to beta weights in multiple regression. The Exp(B) value for the first category was .507. This meant that there was about a 50/50 chance of making a referral if the teacher had been teaching 0-3 years. Table 21 below, a crosstabulation run to illustrate further these results, confirms that this is true.

The second category of the Exp(B) value for the next category is .288. For participants who had been teaching 4-7 years, the odds of making a referral are only .288 times greater than those teachers in category 1 who had only taught 0-3 years. This is not a significant increase for the greater number of years experience. The third category has an Exp(B) value of .222, which indicated that the odds of a teacher in this category (8-11 years) making a referral was only .222 times greater than a teacher in the first category, even less of an increase. The fourth category which was participants with 12 or more years experience, had an Exp(B) value of 4.666, indicating the odds of making a referral had increased by a factor of 4.5 as compared with teachers in category 1.

The second successful step was adding in Teacher Efficacy to the model and, again, it was a significant predictor. SPSS then tried all the other variables, but none were retained in the

equation because they were not found to be significant. The teacher efficacy score had an Exp(B) value of 1.072. This variable is not categorical, as opposed to years teaching, so this value means that, with every one unit increase in teacher efficacy score, there is a 1.072% decrease in the probability of making a referral.

Table 21

Referred Child to Special Services Crosstabulation Count

Years Teaching	Referred Child		Total
	Yes	No	
0-3 Years	46	46	92
4-7 Years	67	34	101
8-11 Years	66	20	86
12 or more Years	144	32	176
I am not a teacher	6	29	35
Total	329	161	490

The bar graph in Figure 2 shows that teacher efficacy scores ranged from 30 to 65, supported by the data in Table 22. It appears that most of the teachers are gathered in the 46 to 57 range. In fact, according to Tables 22 and 23, the middle 50% of the teachers (from the 25th percentile to the 75th percentile) fall into scores between 48 and 55, indicating that scores are a little more skewed to the right for the overall group as compared to the lower end. Therefore, it seems that, in order to really see a shift from "not making a referral" to "making a referral", a decrease of more than a few points on the Teacher Efficacy Scale would be needed which is also indicated in the Exp(B) column in Table 22: A one unit (or one point) increase in the teacher efficacy scale leads to approximately a 1% decrease in probability of making a referral.

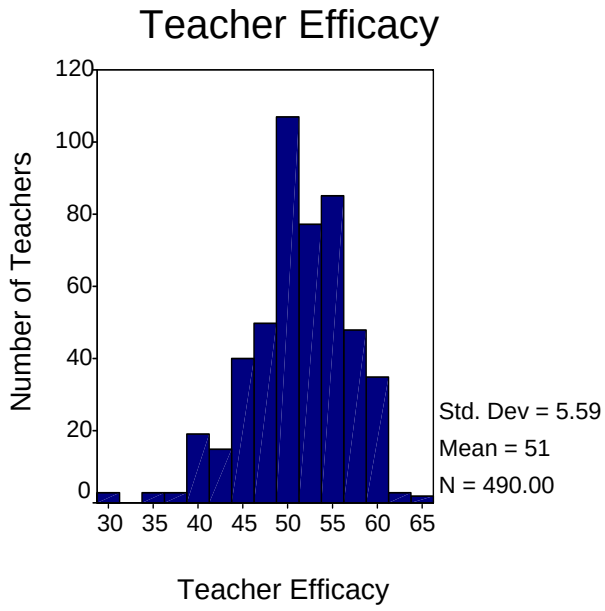

Figure 2. Teacher Efficacy Scores of all Participants

Table 22

Teacher Efficacy Scores

Mean		51.2633
Median		52.0000
Std. Deviation		5.59415
Minimum		30.00
Maximum		65.00
Percentiles	25	48.00
	50	52.00
	75	55.00

The Hosmer and Lemeshow Test (Table 23) was done at each step of the regression. It is a test of goodness of fit and the "null" is that it is a good fit. The significance levels are well above .0500. Therefore, the regression model is a good fit to the data (Fink, 1995).

Table 23

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.000	3	1.000
2	7.557	8	.478

In Table 24, logistic regression has an r^2 measure which states how much of the variance in the dependent variable, also called referral variable, the predictor variables can account for or predict. This model, when using just years teaching, accounts for 18.8% of the variance in referral. When the summated teacher efficacy score was added, this accounted for variance increases to 21.9%.

Table 24

Model Summary

Step	-2 Log likelihood	Nagelkerke R^2
1	545.485	.188
2	532.828	.219

Differences among schools with regard to key baseline measures were further examined using ANOVA. The following ANOVA specified School as the categorical or grouping variable. The independent variables were: years teaching, years in school, referral of child to special services, and institutional integrity summed, collegial leadership summed, resource influence summed, teacher affiliations summed, academic emphasis summed, and teacher efficacy summed scores. Table 25 displays the data among schools with regard to key baseline measures.

Table 25

ANOVA of Variables

		Sum of Squares	df	Mean Square	F	Sig.
Years Teaching	Between Groups	20.909	9	2.323	1.465	.158
	Within Groups	760.987	480	1.585		
	Total	781.896	489			
Years in Current School	Between Groups	72.681	9	8.076	8.374	.000
	Within Groups	462.903	480	.964		
	Total	535.584	489			
Referred Child to Special Services	Between Groups	1.775	9	.197	.890	.534
	Within Groups	106.325	480	.222		
	Total	108.100	489			
Institutional Integrity	Between Groups	548.618	9	60.958	6.079	.000
	Within Groups	4792.915	478	10.027		
	Total	5341.533	487			
Collegial Leadership	Between Groups	5508.800	9	612.089	15.679	.000
	Within Groups	18738.106	480	39.038		
	Total	24246.906	489			
Resource Influence	Between Groups	1290.736	9	143.415	10.769	.000
	Within Groups	6392.548	480	13.318		
	Total	7683.284	489			
Teacher Affiliations	Between Groups	2642.147	9	293.572	13.949	.000
	Within Groups	10060.312	478	21.047		
	Total	12702.459	487			
Academic Emphasis	Between Groups	326.581	9	36.287	6.863	.000
	Within Groups	2527.386	478	5.287		
	Total	2853.967	487			
Teacher Efficacy	Between Groups	3781.400	9	420.156	17.504	.000
	Within Groups	11521.639	480	24.003		
	Total	15303.039	489			

The variable years teaching presented no significant differences among schools ($F(9,480) = 1.465$, $p > .05$). There were also no significant differences among schools in terms of teachers

who reported referrals to student services ($F(9, 480) = .890$, $p > .05$). However, there were significant differences among the schools in terms of teachers' number of years in current school ($F(9, 480) = 8.374$, $p > 01$. Since a significant F-value was obtained in this ANOVA, results were examined more carefully to discover exactly where significant differences were. The post hoc test applied was Tukey's Honestly Significant Difference (HSD) test.

Post hoc Tukey's HSD tests showed the pairs in Table 25 which differed significantly. Table 26 below is a subset of the significant pairs of schools from the entire table. The ANOVA descriptive tables revealed additional information about the significant pairs and significant differences are asterisked. The numbers in the table are mean differences, confidence intervals, and standard errors. Significant differences among schools were also found among the five organizational health subscales as well as the teacher efficacy measure. The column representing mean differences indicates that, for a positive number in the school (i) section, that school has a greater mean difference than a school in the school (j) section. If it is in the school (i) column and the mean is negative, the school's mean is greater than a school in the school I column.

While all the variables show significant differences among schools, academic emphasis shows the most homogeneity in the schools, while the others show greater differences. The variable with the most differences is efficacy. It is apparent then that collegial leadership and efficacy have the greatest magnitude of differences, as indicated by the largest mean differences.

Table 26

Significant Pairs of Schools for Nine Dependent Variables at the Teacher Level According to Tukey HSD Post Hoc Test

Dependent Variable	(I) School	(J) School	Difference Between Means (I-J)	Significance Level
Institutional Integrity	1	8	2.9457	.005
	2	8	2.8968	.000
	3	10	-2.5055	.019
	5	8	2.2722	.026
	6	10	-2.9152	.001
	8	10	-4.4827	.000
		11	-2.2011	.006
		13	-2.6975	.000
	10	11	2.2816	.028
		12	3.0303	.001
Collegial Leadership	1	10	6.3812	.005
	2	6	3.9835	.032
		8	7.1277	.000
		10	10.0338	.000
		12	7.7384	.000
	3	8	6.8649	.000
		10	9.7710	.000
		12	7.4756	.000
		8	6.4945	.000
		10	9.4006	.000
		12	7.1053	.000
	6	10	6.0503	.000
		13	-4.1115	.012
	8	11	-4.8966	.001
		13	-7.2557	.000
		11	-7.8027	.000
		13	-10.1618	.000
	11	12	5.5074	.000
	12	13	-7.8664	.000

(table continues)

Table 26 *(continued)*

Dependent Variable	(I) School	(J) School	Difference Between Means (I-J)	Significance Level
Resource Influence	1	10	3.3529	.019
	2	8	2.6754	.005
		10	4.5196	.000
		12	3.4583	.000
	3	10	3.3742	.002
	5	8	3.4007	.001
		10	5.2448	.000
		12	4.1836	.000
	6	8	2.9633	.001
		10	4.8075	.000
		12	3.7462	.000
		11	-2.4780	.008
	8	13	-3.0088	.000
		11	-4.3222	.000
	10	13	-4.8529	.000
	11	12	3.2609	.000
	12	13	-3.7917	.000
Teacher Affiliations	1	2	-4.1541	.008
		3	2.9251	.047
		8	6.6098	.000
		10	7.4680	.000
		11	3.3356	.004
		12	6.5532	.000
	3	8	3.6847	.002
		10	4.5429	.001
		12	3.6281	.005
	5	8	3.9141	.003
		10	4.7723	.001
		12	3.8575	.005
	6	8	5.0084	.000
		10	5.8667	.000
		12	4.9519	.000
		11	-3.2742	.004
	8	13	-4.9181	.000
	10	11	-4.1324	.001
		13	-5.7763	.000
	11	12	3.2176	.010
	12	13	-4.8615	.000

(table continues)

Table 26 *(continued)*

Dependent Variable	(I) School	(J) School	Difference Between Means (I-J)	Significance Level
Academic Emphasis	2	8	2.1184	.000
		10	2.3300	.000
		12	1.4606	.047
	3	8	1.8568	.002
		10	2.0683	.003
	6	8	2.3763	.000
		10	2.5879	.000
		12	1.7186	.007
	8	13	-1.8624	.000
	10	13	-2.0740	.001
Teacher Efficacy	1	2	-4.9659	.001
		6	-4.8218	.002
	2	8	8.5926	.000
		10	7.3965	.000
		11	3.6644	.002
		12	5.5301	.000
		13	3.8083	.001
	3	8	7.3262	.000
		10	6.1302	.000
		12	4.2637	.001
	5	8	5.9099	.000
		10	4.7138	.002
	6	8	8.4485	.000
		10	7.2524	.000
		11	3.5203	.004
		12	5.3860	.000
		13	3.6642	.002
	8	11	-4.9282	.000
		12	-3.0625	.048
		13	-4.7843	.000
	10	11	-3.7321	.013
		13	-3.5882	.019

Teacher Level Correlations

Table 27 displays the next sets of correlations for the teacher level variables. Since the sample size of 490 is considerably larger than the school level variables, even smallish correlations can be considered significant.

1. Years Teaching and Years in Current School (r=.47)
2. Years Teaching and Collegial Leadership (r=.13)

3. Years Teaching and Resource Influence (r=.11)
4. Years Teaching and Teacher Affiliations (r=.18)
5. Years in Current School and Teacher Efficacy (r=.12)
6. Years in Current School and Institutional Integrity (r=.13)
7. Years in Current School and Teacher Affiliations (r=.12)
8. Teacher Efficacy and Institutional Integrity (r=.13)
9. Teacher Efficacy and Collegial Leadership (r=.46)
10. Teacher Efficacy and Resource Influence (r=.42)
11. Teacher Efficacy and Teacher Affiliations (r=.57)
12. Teacher Efficacy and Academic Emphasis (r=.57)
13. Institutional Integrity and Collegial Leadership (r=.16)
14. Institutional Integrity and Teacher Affiliations (r=.22)
15. Collegial Leadership and Resource Influence (r=.71)
16. Teacher Affiliations and Collegial Leadership (r=.71)
17. Teacher Affiliations and Resource Influence (r=.60)
18. Academic Influence and Collegial Leadership (r=.49)
19. Academic Influence and Resource Influence (r=.49)
20. Academic Influence and Teacher Affiliations (r=.60)

Table 27

Teacher Level Correlations

		Years Teaching	Years in Current School	Teacher Efficacy	Institutional Integrity	Collegial Leadership	Resource Influence	Teacher Affiliations	Academic Emphasis
Years Teaching	Pearson Correlation	1	.466**	.040	.080	.126**	.103*	.182	.086
	N	490	490	490	488	490	490	488	488
Years in Current School	Pearson Correlation	.466**	1	.123**	.126**	.038	.073	.118**	.041
	N	490	490	490	488	490	490	488	488
Teacher Efficacy	Pearson Correlation	.040	.123**	1	.127**	.456**	.418**	.572**	.567**
	N	490	490	490	488	490	490	488	488
Institutional Integrity	Pearson Correlation	.080	.126**	.127**	1	.159**	.041	.219**	.028
	N	488	488	488	488	488	488	488	488
Collegial Leadership	Pearson Correlation	.126**	.038	.456**	.159**	1	.712**	.706**	.491**
	N	490	490	490	488	490	490	488	488
Resource Influence	Pearson Correlation	.103*	.073	.418**	.041	.712**	1	.598**	.493**
	N	490	490	490	488	490	490	488	488
Teacher Affiliations	Pearson Correlation	.182**	.118**	.572**	.219**	.706**	.598**	1	.598**
	N	488	488	488	488	488	488	488	488
Academic Emphasis	Pearson Correlation	.086	.041	.567**	.028	.491**	.493**	.598**	1
	N	488	488	488	488	488	488	488	488

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

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

Referral Prediction

In order to predict the chance of teacher referral based on specific variables, a logistic regression model was used. As stated above, logistic regression allows for prediction of a discrete outcome, from a set of variables that may be continuous, discrete, dichotomous, or a mix of these. The dependent response is generally dichotomous (Agresti, 1996). Below represents the logistic regression equations used in this analysis. In the first logistic regression equation for this analysis □ = the constant of the equation and □ = the coefficient of predictor variables. The second is an alternative form of the logistic regression equation.

$$\theta = \frac{e^{(\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_i x_i)}}{1+e^{(\alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_i x_i)}}$$

$$\text{logit}[\theta(x)] = \log\left[\frac{\theta(x)}{1-\theta(x)}\right] = \alpha+\beta_1 x_1+\beta_2 x_2+\ldots+\beta_i x_i$$

As indicated in Table 28, there was no significant correlation between Title I status and referrals to special services. Table 29 and Table 30 indicate similar results: In terms of observed and expected, there are no significant differences between what was observed in these categories and what would be expected based on chi-square probability (χ^2 (df = 1) = 1.513, p = .219).

Table 28

Spearman's rho Correlations Between Title I Status and Referral to Special Services

		Title I Status	Referred Child to Special Services
Title I Status	Correlation Coefficient	1.000	.056
	Sig. (2-tailed)	-	.219
	N	490	490
Referred Child to Special Services	Correlation Coefficient	.056	1.000
	Sig. (2-tailed)	.219	.
	N	490	490

Table 29

Referred Child to Special Services - Title I Status Crosstabulation

			Title I Status		Total
			No	Yes	
Referred Child to Special Services	Yes	Observed Count	203	126	329
		Expected Count	196.7	132.3	329.0
	No	Observed Count	90	71	161
		Expected Count	96.3	64.7	161.0
Total		Observed Count	293	197	490
		Expected Count	293.0	197.0	490

Table 30

Chi-Square Tests of Variables

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.513	1	.219		
Continuity Correction	1.282	1	.258		
Likelihood Ratio	1.507	1	.220		
Fisher's Exact Test				.240	.129
Linear-by-Linear Association	1.510	1	.219		
N of Valid Cases	490				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 64.73.

Figures 3 through 9 are histograms which show the shape of the distribution and display the skewness and kurtosis for the distribution. All the histograms below, except years in current school are negatively skewed, which indicates more high scorers. (Green & Salkind, 2003). The kurtosis of the distribution is negative, but only by a fraction, which indicates that the distributions are neither leptokurtic nor platykurtic. The higher, positive numbers are those that lean toward the leptokurtic side, negative numbers are more platykurtic. Table 31 includes all of the information shown in the figures.

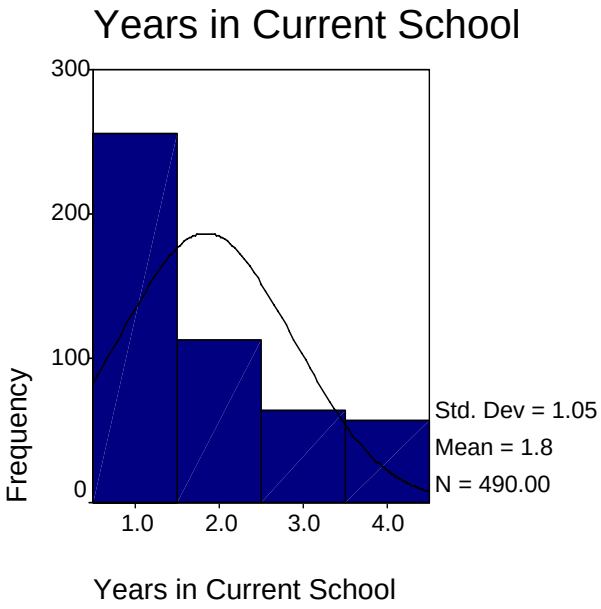

Figure 3. Histogram of Years in Current School of Participants

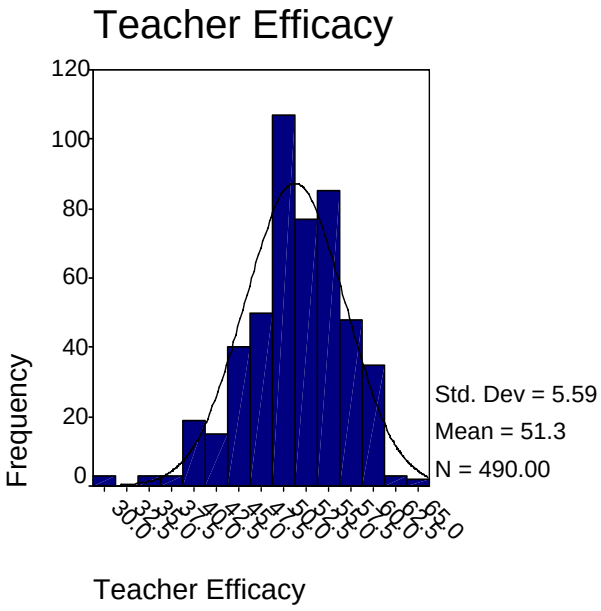

Figure 4. Teacher Efficacy Scores of Participants

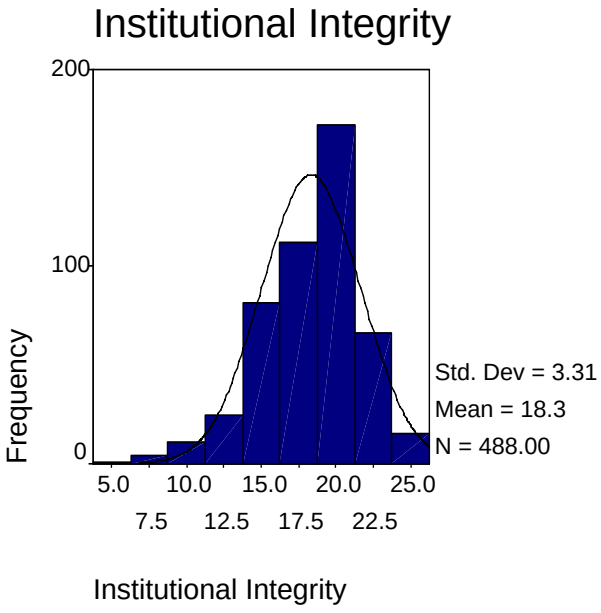

Figure 5. Institutional Integrity Scores of Participants.

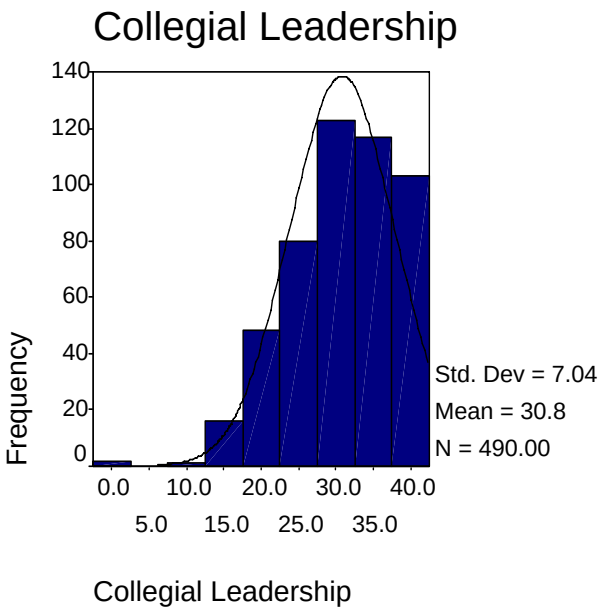

Figure 6. Collegial Leadership Scores of Participants.

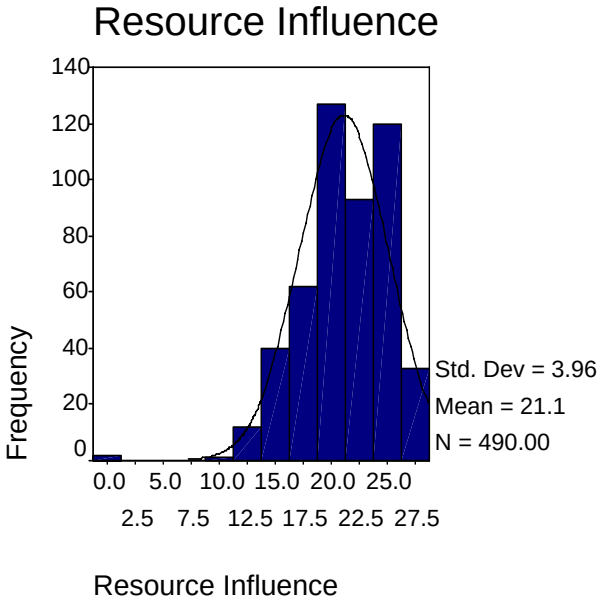

Figure 7. Resource Influence Scores of Participants.

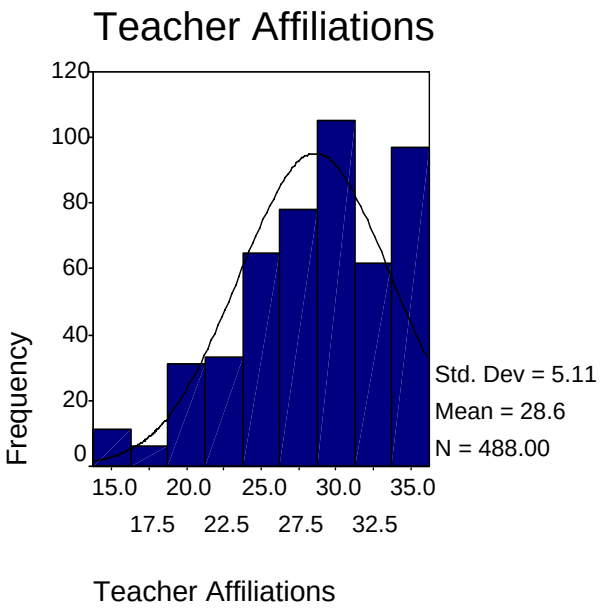

Figure 8. Teacher Affiliation Scores of Participants.

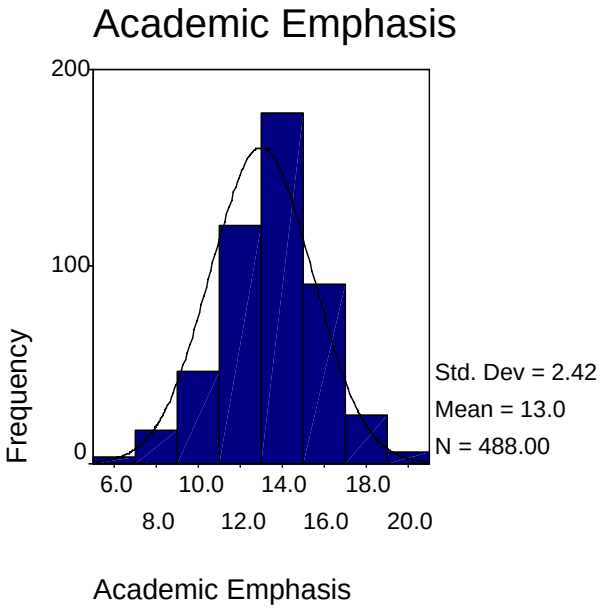

Figure 9. Academic Emphasis Scores of Participants.

Table 31

Variable Scores for all Participants

		Years Teaching	Years in Current School	Teacher Efficacy	Institutional Integrity	Collegial Leadership	Resource Influence	Teacher Affiliations	Academic Emphasis
N	Valid	490	490	490	488	490	490	488	488
	Missing	0	0	0	2	0	0	2	2
Mean		2.92	1.84	51.2633	18.3402	30.8245	21.1408	28.6066	13.0082
Std. Deviation		1.265	1.047	5.59415	3.31183	7.04164	3.96387	5.10716	2.42081
Skewness		-.197	.935	-.583	-.747	-.819	-.862	-.567	-.195
Kurtosis		-1.223	-.460	.627	.654	.696	2.303	-.160	.406

Final Summary of Information

Figure 10 offers a visual representation of the data analysis. LD prevalence rate, school health, and collective efficacy are all plotted on the following graph.

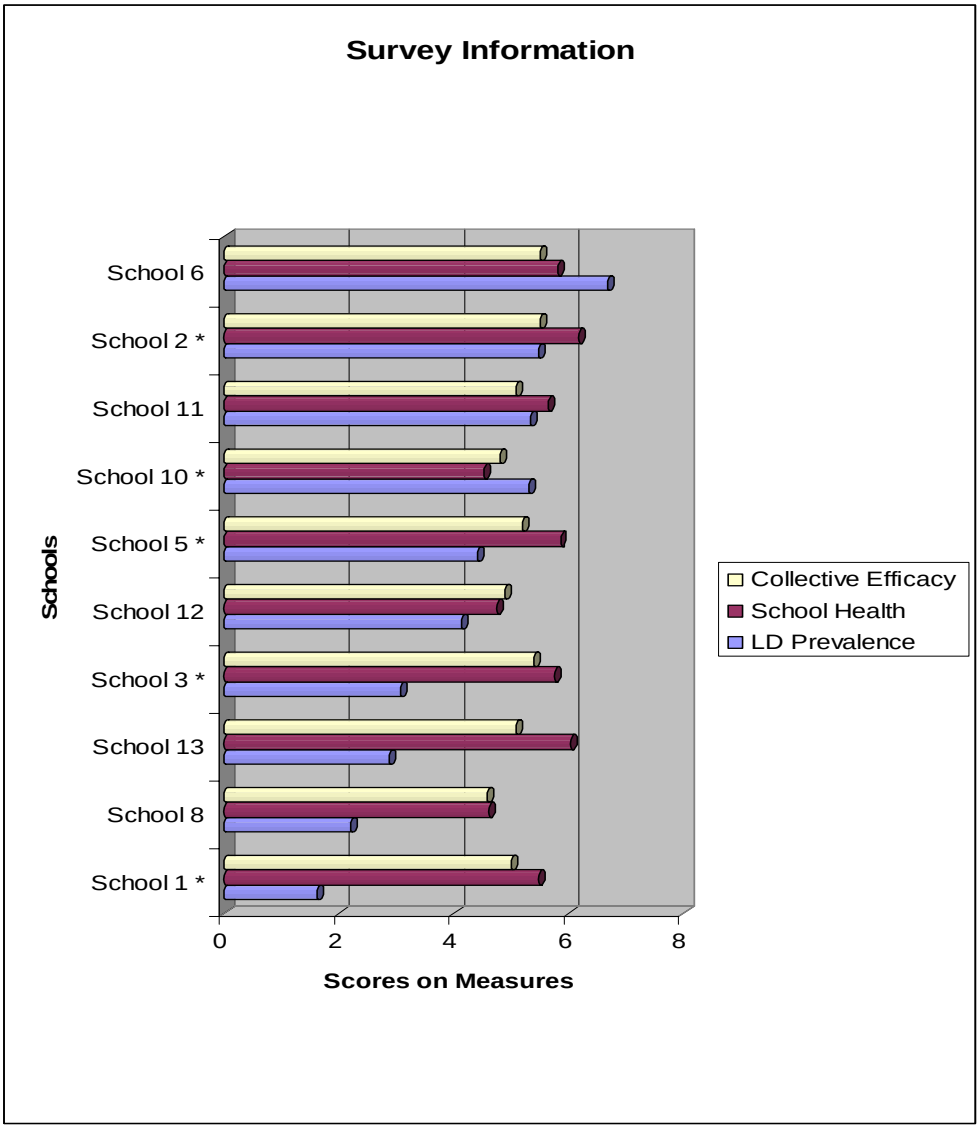

Figure 10. Bar graph of studied variables

CHAPTER FIVE

Discussion and Conclusions

The purposes of this chapter are to provide a general summary of the study and to present discussions and conclusions drawn from the findings in Chapter 4. Recommendations for further study also will be offered as well as a discussion of the implications for the special education referral rates.

Summary of the Study

Since the inception of the 1974 Education for all Handicapped Children Act, the number of students referred to special education has been steadily rising (citation). With one out of every seven students qualifying for special education services and 46% of those students falling into the learning disabled category (NCES, 2003), the question arises as to what factors influence this determination. This study, in an attempt to address the issue, posed two questions: (a) How does organizational health correlate with the number of students referred to special education in a given school and (b) how does collective teacher efficacy correlate to the number of students referred for special education? Descriptive data presented information for further analysis as did individual scores for teacher efficacy.

The theoretical framework presented by Brofenbrenner provided a road map for further investigation of the mesosystem, which, for this study, was inside the school (Brofenbrenner, 1977). A school's mesosystem comprises the interrelations among two or more settings and, for the purposed of this study, those settings were institutional

integrity, collegial leadership, resource influences, teacher affiliation, academic emphasis, school health, collective efficacy, school size, school poverty, school demographics, and number of teachers.

This study addressed ten schools' LD prevalence rates by surveying teachers in those schools. A total of 490 teachers completed an online survey with an overall response rate of 87%. Teachers answered 53 questions, four demographic questions, 12 collective efficacy questions, and 37 organizational health questions. The survey, supported by the principals in each school, was designed to collect information on collective school efficacy and construct an overall health score for each participating school. Additional data collected in the study included LD prevalence rates, free and reduced lunch rates, full-time equivalent teaching staff data, teaching experience of each respondent, years in current building of each respondent, and whether or not the respondent had ever made a referral to special education.

A collective efficacy score and an organizational health score was constructed for each school. Standardized subscale scores for organizational health were reported for each school. Descriptive statistics on years teaching and years in current schools was presented. ANOVA and Tukey HSD post hoc test were the statistics used to analyze the results. Factor analyses were performed on both published scales.

Summary of Research Findings

Summary of Research Question One

The first research question was: How does school organizational health correlate with the number of students referred to special education in a given school? Of the 53

items on the survey, 37 questions made up the Organizational Health Inventory for Elementary Schools. These 37 questions made up five standardized subscale scores: Institutional Integrity, Collegial Leadership, Resource Influence, Teacher Affiliations, and Academic Emphasis. These five subscales accounted for an Overall Health score. In regards to Overall Health and LD prevalence rate, the linearity of the relationships between both variables were not contained in the correlation matrix in Chapter 4 due to a lack of a linear relationship. Therefore, the findings indicate that there is no relationship between a school's organizational health score and a school's LD prevalence rate.

The standardized scores on the Organizational Health are highly correlated since they are subscales of a larger scale. They are related to each other, but not to other variables such as poverty, years of teaching, and teacher ratio. However, the standardized health subscale scores, as well as the overall health score, are related to each other, as well as to the mean teacher efficacy score. A healthy school climate evidently fosters a teacher's efficacy which may be perceived as a more positive work environment (Hoy & Woolfolk, 1993).

Summary of Research Question Two

Research question two was: How does collective teacher efficacy correlate to the number of students referred for special education services? Of the 53 items on the survey, 12 of the questions made up the Collective Efficacy Scale. The mean of all the schools was generally high, ranging from 46-55. A forward stepwise logistic regression model was run, which found two variables noted as predictors of referrals: years teaching and teacher efficacy score. Years teaching had a Wald statistic of 57.371, which is significant at the $p < .001$ level. The odds of teachers with 12 or more years of

professional experience making referrals were 4.5 times higher than those teachers who had taught only 0-3 years. The results of this study found that teachers with more years experience had a higher referral rate than those with less experience.

When using just years teaching in the exploratory model, this variable accounted for 18.8% of the variance in the referral to special education variable, but, when adding the summated teacher efficacy score, it accounted for variance of referral increases to 21.9%. With every one unit increase on the teacher efficacy scale, there was a 1% decrease in the probability of making a referral. At the same time, school collective efficacy scores did not correlate with LD prevalence rates, although collective efficacy of schools correlated with school health.

Supplemental Findings

Several additional findings are worthy of discussion. In particular, supplemental analyses were performed for teacher-level correlations, along with further inquiry of teaching longevity and special education referral prediction. Teacher level correlations of the 490 respondents were significant. With such a large sample size, these correlations are noteworthy.

There was a significant correlation between years teaching and years in current school ($r = .47$). Teachers who stayed in the same building were more likely to remain in the teaching profession. Teacher efficacy and collegial leadership ($r = .46$) had a significant correlation as well. Teachers perceived themselves and their colleagues as more effective in their teaching if there were high expectations set by the principal. The schools where this was a positive perception tended to be smaller in size and the principal generally reached consensus on decisions rather than having more formal control of the

staff (Hoy et al., 1991). There was also a strong correlation between teacher efficacy and resource influence (r = .42). Teachers perceived themselves as more effective when they were given adequate materials and instructional supplies.

Teacher efficacy and teacher affiliations (r = .57) proved to be another strong correlation, with teachers perceiving themselves and their colleagues more effective with students when they were committed to the seriousness of the teaching-learning enterprise. Teacher affiliation is a concept often linked to the maintenance of an organization and is defined as commitment and identification with the mission of the school (Hoy et al., 1991). Gerber and Semmel (1984) suggest that the decisions to refer a student in many cases is one of straight economics, particularly related to maximizing limited teaching resources. Those teachers who had strong correlations between resource influence and teacher efficacy may be more apt to refer if they perceive resources as becoming scarce.

Teacher efficacy was also were strongly correlated with academic emphasis (r = .57). Once again, efficacy was high when teachers perceived their students as caring about learning. This relationship fostered concern about academic progress on the part of the teacher. It has been proven that high and low efficacy teachers differ in their interactions with students, especially, in their contact with low-achieving students: Teachers with a high sense of efficacy seemed to employ a pattern of strategies that minimize negative affects, promote an expectation of achievement, and provide a definition of the classroom situation characterized by warm interpersonal relationships and academic work. Teachers with a low sense of efficacy appeared to establish a pattern of strategies that heightened negative affects and promoted an expectation of failure for low-achieving students.

The importance of academic emphasis, according to Moats & Lyon (1993), is seen when teachers refer children for special education assessment based on the teachers' need for additional help with that student at that point in time, rather than on any objective characteristics of the student. Teachers tolerate academic failure, learning difficulties, and low achievement in just as many children whom they may never refer for evaluation or supplementary service, when they believe they are still capable of teaching these students.

Teachers' assessments of their ability to educate low achieving students are influenced by the rate at which the other students in the classroom are learning. Children are often described as not learning like the rest of the class and, thus, as having a learning disability. Researchers state a disability is most likely associated with differences or deviance from the norm of progress or achievement associated with learning at a particular level (Meyer & Patton, 2001). Strong correlations between teacher efficacy and academic emphasis in the current study would suggest the same. Ashton and Webb (1986) found that teachers who assumed more responsibility for their students' learning tended to have higher efficacy scores. Teachers who believe they can make a difference in students' performance accept responsibility for student failure and feel guilty about this failure. Previous studies have reported that teachers with a strong sense of efficacy worked in climates that promoted shared decision-making and collaborative culture. These teachers provided this type of environment for their students in order to be successful.

An excellent case for greater collaboration and collaborative decision-making at the school has been made in previous years (Enderlin-Lampe, 1997). Without the belief

that teachers can affect a difference either from a personal standpoint or from an organizational stance, meaningful change cannot occur. Clear goal coherence and defined teacher roles and expectations are a critical piece in schools that must be initiated and sustained by the school leadership and staff (Enderlin-Lampe, 1997). In the current study, collegial leadership was strongly correlated with three other variables: resource influence (r = .71), teacher affiliations (r = .71), and academic emphasis (r = .49), which correlates with what is cited in the literature: Principals in elementary schools who are more instructional leaders rather than managers generally score high in collegial leadership and they set the tone of the building, one that supports learning. The current study goes further, suggesting that teachers in these types of environments feel they have good instructional resource support, report feeling connected to their buildings, and have classroom environments conducive to learning.

Teacher affiliations and resource influence (r = .60) were strongly correlated as were academic influence with resource influence (r = .49) and academic influence and teacher affiliations (r = .60). Teacher affiliation is a measure of the social satisfaction teachers find in working at their school; these feelings of solidarity integrate teachers into the social fabric of the school and should be seen as an expressive dimension of school life (Hoy et al., 1991). When teachers feel connected to their colleagues, their feelings towards resources and students appear to be strong as well. These significant correlations among teacher level data support the finding of this study's literature review: The importance of supportive principal behavior in schools cannot be overstated.

As noted in by Brownell & Pajares (1999), the ability of a school principal to foster a collaborative school climate critically affects the teachers' sense of efficacy.

Lohman (2000) suggested that low levels of principal support led to teachers doing less informal learning, defined as a form of reflecting on one's teaching expertise in an effort to cope with problems that arise in the classroom. Informal learning activities included exchanging ideas with others, actively experimenting with new techniques, and using sources outside the classroom. These informal learning activities are all characteristics of effective teacher solutions to issues inside the classroom.

The connection between a teachers' efficacy and the principals' leadership has also been identified in the literature (Hipp & Bredeson, 1995), something this study also found: Significant relationships were reported between overall leadership behavior and both general teaching efficacy and personal teaching efficacy. These findings imply that principals can positively influence teachers' efficacy through modeling behavior, providing contingent rewards, and inspiring a sense of purpose. Hipp (1997) found, and this study substantiates this finding, that principals can create positive school climates that foster teamwork and collaboration while increasing teachers' efficacy.

Another interesting finding was in the descriptive data. The mean of years teaching for all ten schools was less than 3.25 years with a standard deviation of 1.24 years. In addition, years in current school was even less, with the largest mean 2.50 and a standard deviation of 1.26. As this study found leadership with a minimum of two years, clearly teaching staff was equally as young to both the profession and the collegial environment of the building.

Referral Prediction

There was no significant relationship between Title I status and referrals to special education. The odds of teachers with 12 or more years experience making referrals were

over 4.5 times more likely to happen than those teachers who had taught only 0-3 years. Years teaching accounts for 18.8% of the variance in referrals. When summated teacher efficacy scores were added, this accounted for variance increases to 21.9%.

McIntyre (1990) attempted to predict referral using a measurement of teachers' standards for behavior, the SBS Inventory of Teacher Social and Behavior Standards, and a measurement of their perceptions of the behavior of referred and non-referred elementary students, the Child Behavior Checklist. Using regression analyses, McIntyre predicted only 9.7% of the variance in teacher referrals. The current study's 21.9% variance is a much stronger indicator of referrals. This finding is even better than McIntyre's two-way interactions of student aggression with teacher standards and gender which explained 19% of the variance in teachers' referral decisions.

Limitations of the Study

The following were limitations of the study:

1.) Format – The on-line questionnaire may have intimidated some respondents and it is possible fear that individual comments could be derived from each form, even though it was stated that it was confidential, may have also limited who responded to the survey.

2.) Years Teaching Question - Continuous data rather than categorical data on this question may have increased the variance.

3.) Referred to Special Education Questions – Continuous data would have been preferred to the "yes/no" question that was used in the survey.

4.) Timing – The data on referrals occurred prior to the spring rush teachers experience each school year; perhaps more respondents would have answered "yes" to the referral question if the survey was given out at the end of the year rather than mid-year.

5.) Sample size of schools- Ten is quite a small sample size for correlational analyses; therefore, school results should be interpreted with the caution.

Findings of the Study

The results of the study are summarized below. These 13 results are the key findings:

1. There was no relationship between a school's organizational health and a school's LD prevalence rate.

2. A school's overall health score was related to the mean teacher efficacy score, indicating that a healthy school climate is associated with higher teacher efficacy.

3. The odds of teachers with 12 or more years experience referring students for special education were over 4.5 times more likely to occur than among those teachers who had taught only 0-3 years.

4. A one point increase in the teacher efficacy scale led to about a 1% decrease in probability of making a referral.

5. Years teaching accounted for 18.8% of the variance in referrals. When summated teacher efficacy scores were added, this accounted for variance increases to 21.9%.

6. There is a correlation between school size and standardized institutional integrity: Higher standardized institutional integrity appears to be related to a smaller school size.

7. Correlational statistics indicate that, as school size goes up in this sample of schools, Title I status goes down or is less likely.

8. Staffs surveyed were fairly new to the profession with means of experience ranging from 1.69 years to 2.50 years.

9. Staffs surveyed were fairly new to the buildings with means ranging from 2.67 years to 3.19 years.

10. Collegial leadership and efficacy have the greatest magnitude of differences, as indicated by the largest mean differences.

11. Limited English proficiency and free lunch were very highly correlated.

12. All schools were either high or very high in the subgroup Institutional Integrity.

13. All schools ranged from low to below average for academic emphasis. For the purposes of this study, academic emphasis questions dealt largely with students seeking out opportunities to get higher grades and students respecting students with good grades. Survey questions did not include questions about school's mission for academic excellence or academic rigor in its programs. Thus, this finding should be interpreted with caution.

Recommendations

Principals and principal preparation programs need to understand that there is a correlational relationship between teacher efficacy and school health and the principal plays a critical role in both. Although the LD prevalence rate in the schools in this study cannot be directly correlated to the ratings on each of these scales, the teaching practices that occur in the buildings can: A healthy school is more effective and can act purposefully to enhance student learning (Goddard et al., 2000). Teacher efficacy and school organizational health correlate in the schools studied.

From this research, it can be seen that the staffs in the ten buildings surveyed were quite young and had not become cohesive. As districts spend time and money implementing professional learning communities, there needs to be acknowledgement of youth and lack of longevity on many, if not most, school teams. Results from this and other studies support the importance of retention and capacity building within schools. School leaders need to consider how they can empower their teachers and enhance opportunities to promote higher collective efficacy scores: Collegial leadership and efficacy were shown to have the greatest magnitude in difference among schools. As a learning community, it is important to share what is occurring in our schools so that no school works in isolation.

This study would be remiss if it were not to mention the fact that a higher standardized institutional integrity appears to be related to a smaller school size. As we build ever larger elementary schools, it appears we move further away from higher institutional integrity. Institutional integrity for the purposes of this research related to the quest on the part of the student to take greater responsibility for his learning and seek out

opportunities to raise his grades. The ability for a principal in a large elementary school to foster a collaborative school climate which affects the teachers' sense of efficacy is difficult. Exploring different models of what so that teachers can build this type of a collaborative climate with principals is critical to the health of the building.

Interesting, the notion that having a large poor and limited English proficient student body, who are often found at Title I schools, did not significantly correlate with special education referrals or LD prevalence rates. This may well inform us that there are practices in Title I schools that should likely be replicated in non-Title I schools. Differentiated instruction and specialized learning are occurring in the Title I schools surveyed and these models of instruction may need to be explored in greater detail by school leaders to establish special education reduction models in high-referring schools.

Time and energy must be spent enhancing the teaching efficacy of all teachers and not just new graduates who are entering the profession. As seen by a 21.9% variance in special education referral when combing efficacy scores and years teaching in this study, there appear to be many teachers who have been teaching greater than twelve years that need to feel more effective with all types of children. Professional development and leadership development would do well to concentrate on this category of teachers.

Further Research

The strong relevance and applicability of these findings highlights the importance of further research in the following areas:

1) Qualitative studies exploring teaching practices in high and low referring schools;

2) Additional studies exploring referral habits of teachers and number of students referred per year (continuous variables);

3) Qualitative and quantitative studies exploring the practices of Child Study/Local Screening Teams at high and low referring schools; and

4) Additional studies on teaching practices and teaching models in Title I schools.

REFERENCES

Abidin, R. R., & Robinson, L. L. (2002). Stress, Biases, or Professionalism: What Drives Teachers' Referral Judgments of Students with Challenging Behaviors? *Journal of Emotional and Behavioral Disorders, 10*(4), 204-214.

Adelman, H., & Taylor, L. (1998). Involving Teachers in Collaborative Efforts to Better Address the Barriers to Student Learning. *Preventing School Failure, 42*(2), 55-60.

Agresti, A. (1996). *An Introduction to Categorical Data Analysis*: John Wiley and Sons Inc.

Algozzine, B., & Curran, T. H. (1979). Teachers' Predictions of Children's School Success As a Function of Their Behavioral Tolerances. *Journal of Educational Research, 72*(6), 344-347.

Algozzine, B., & Ysseldyke, J. (1982). Classification Decisions in Learning Disabilities. *Educational and Psychological Research, 2*(2), 117-129.

Algozzine, B., Ysseldyke, J., & Christenson, S. (1983). The analysis of the incidence of special class placements: the masses are burgeoning. *The Journal of Special Education, 17*(2), 141-147.

Algozzine, B., Ysseldyke, J., & McGue, M. (1995). Differentiating low-achieving students: Thoughts on setting the record straight. *Learning Disabilities Research & Practice, 10*, 140-144.

Anderson, K. G. (1997). Gender Bias and Special Education Referrals. *Annals of Dyslexia, 47*, 151-162.

Andrews, T., Mulick, J., & Wisniewski, J. (1997). Variables Influencing Teachers' Decisions to Refer Children for School Psychological Assessment Services. *Psychology in the Schools, 34*(3), 239-244.

Artiles, A. J., & Trent, S. C. (1994). Overrepresentation of Minority Students in Special Education: A Continuing Debate. *The Journal of Special Education, 27*(4), 410-437.

Ashton, P., & Webb, R. (1986). *Making a Difference: Teachers' Sense of Efficacy and Student Achievement*. New York: Longman.

Babbie, E. (1990). *Survey Research Methods*. Belmont: Wadsworth Publishing Company.

Bandura, A. (1977). Self-efficacy: Toward a Unifying Theory of Behavioral Change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1994). Self-Efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). San Diego: Academic Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman and Company.

Bateman, B. D. (1965). An educator's view of a diagnostic approch to learning disorders. In Hellmuth (Ed.), *Learning Disorders* (Vol. 1, pp. 219-239). Seattle: Special Child Publications.

Bay, M., & Bryan, T. (1992). Differentiating Children Who Are At Risk for Referral from Others on Critical Classroom Factors. *Remedial and Special Education, 3*(4), 27-33.

Brofenbrenner, U. (1977). Toward an Experimental Ecology of Human Development. *American Psychologist, 5*(15), 513-531.

Brownell, M., & Pajares, F. (1999). Teacher Efficacy and Perceived Success in Mainstreaming Students with Learning and Behavior Problems. *Teacher Education and Special Education, 22*(3), 154-164.

Burns, M. (1999). Effectiveness of Special Education Personnel in the Intervention Assistance Team Model. *The Journal of Educational Research, 92*(6), 354-356.

Cooper, D. H., & Speece, D. L. (1988). A Novel Methodology for the Study of Children at Risk for School Failure. *The Journal of Special Education, 22*(2), 186-199.

Cooper, D. H., & Speece, D. L. (1990). Maintaining At-Risk Children in Regular Education Settings: Initial Effects of Individual Differences and Classroom Environments. *Exceptional Children, 57*(2), 117-126.

Coutinho, M., Oswald, D., & Best, A. (2002). The Influence of Sociodemographics and Gender on the Disproportionate Identification of Minority Students as Having Learning Disabilities. *Remedial and Special Education, 23*(1), 49-59.

Cowen, E., Weissberg, R., & Guare, J. (1984). Differentiating Attributes of Children Referred to a School Mental Health Program. *Journal of Abnormal Child Psychology, 12*(3), 397-410.

Dembo, M., & Gibson, S. (1985). Teachers' Sense of Efficacy: An Important Factor in School Improvement. *The Elementary School Journal, 86*(2), 173-184.

Dibella-McCarthy, H., McDaniel, E., & Miller, R. (1995). How Efficacious are You? *Teaching Exceptional Children, 27*(3), 68-70.

Drame, E. R. (2002). Sociocultural context effects on teachers' readiness to refer for learning disabilities. *Exceptional Children, 69*(1), 41-53.

Enderlin-Lampe, S. (1997). Shared Decision Making in Schools: Effect on Teacher Efficacy. *Education, 118*(1), 150-156.

Fink, A. (1995). *The Survey Handbook*. Thousand Oaks: SAGE Publications.

Flugum, K., & Reschly, D. J. (1994). Prereferral Interventions: Quality Indices and Outcomes. *Journal of School Psychology, 32*(1), 1-14.

Fuchs, D., Deshler, D., & Reschly, D. J. (2004). The National Research Center on Learning Disabilities: Multimethod Studies of Identification and Classification Issues. *Learning Disabilities Quarterly, 27*(4), 189-195.

Gelzheiser, L. M. (1987). Reducing the Number Identified as Learning Disabled: A Question of Practice, Philosophy, or Policy? *Exceptional Children, 54*(2), 145-150.

Gerber, M. M., & Semmel, M. I. (1984). Teacher as Imperfect Test:Reconceptualizing the Referral Process. *Educational Psychologist, 19*(3), 137-148.

Gibson. (2003). *Special Education*. Fairfax: Gibson Consulting.

Gibson, S., & Dembo, M. (1984). Teacher Efficacy: A Construct Validation. *Journal of Educational Psychology, 76*(4), 569-582.

Goddard, R. (2002). A Theoretical and Empirical Analysis of the Measurement of Collective Efficacy: The Development of a Short Form. *Educational and Psychological Measurement, 62*(1), 97-110.

Goddard, R., & Goddard, Y. (2001). A multilevel analysis of the relationship between teacher and collective efficacy in urban schools. *Teaching and Teacher Education, 17*, 807-818.

Goddard, R., Hoy, W., & Woolfolk, A. (2000). Collective Teacher Efficacy: Its Meaning, Measure, and Impact on Student Achievement. *American Educational Research Journal, 37*(2), 479-507.

Goddard, R., Hoy, W., & Woolfolk, A. (2004). Collective Efficacy Beliefs: Theoretical Developments, Empirical Evidence, and Future Direction. *Educational Researcher, 33*(3), 3-13.

Gottlieb, J., Alter, M., Gottlieb, B. W., & Wishner, J. (1994). Special Education in Urban America: It's Not Justifiable for Many. *The Journal of Special Education, 27*(4), 453-465.

Gottlieb, J., Gottlieb, B. W., & Trongone, S. (1991). Parent and Teacher Referrals for a Psychoeducational Evaluation. *The Journal of Special Education, 25*(2), 155-167.

Green, S., & Salkind, N. (2003). *Using SPSS for Windows and Macintosh* (Third Edition ed.). Upper Saddle River: Prentice Hall.

Gresham. (2002). Misidentification of Students into High Incidence Disability Categories: Implications for Appropriate Education. In *President's Commission on Excellence in Special Education* (pp. 1-16). Washington, DC: University of California-Riverside.

Gresham, F., MacMillan, D., & Bocian, K. (1998). Agreement Between School Study Team Decisions and Authoritative Definitions in Classification of Students At-Risk for Mild Disabilities. *School Psychology Quarterly, 13*(3), 181-191.

Gresham, F. M. (1991). Conceptualizing Behavior Disorders in Terms of Resistance to Intervention. *School Psychology Review, 20*(1), 23-36.

Gresham, F. M., MacMillan, D., & Bocian, K. (1997). Teachers as "Tests": Differential Validity of Teacher Judgements in Identifying Students At-Risk for Learning Difficulties. *The School Psychology Review, 26*(1), 47-60.

Gresham, F. M., Reschly, D. J., & Carey, M. P. (1987). Teachers as "Tests": Classification Accuracy and Concurrent Validation in the Identification of Learning Disabled Children. *School Psychology Review, 16*(4), 543-553.

Haager, D. S., & Windmueller, M. (2001). Early reading intervention for English language learners at-risk for learning disabilities: student and teacher outcomes in an urban school. *Learning Disabilities Quarterly, 24*(4), 235-250.

Hallahan, D. P. (1992). Some Thoughts on Why the Prevalence of Learning Disabilities Has Increased. *Journal of Learning Disabilities, 25*(8), 523-528.

Halpin, A., & Croft, D. (1963). *The organizational climate of schools*. Chicago: Midwest Administration Center of the University of Chicago.

Harvey, V. S. (1991). Characteristics of children referred to school psychologists: A discriminant analysis. *Psychology in the Schools, 28*, 209-218.

Hill, R. B., Baldo, A. J., & D'Amato, R. C. (1999). Teachers' Personalities and Students' Behavior in Referrals for Special Education. *Psychological Reports, 84*, 491-493.

Hipp, K. (1997). The Impact of Principals in Sustaining Middle School Challenge. *Middle School Journal, 33*, 873-901.

Hipp, K., & Bredeson, P. (1995). Exploring Connections between Teacher Efficacy and Principals' Leadership Behaviors. *Journal of School Leadership, 5*, 136-150.

Hoy, W., & Forsyth, P. (2000). *Effective Supervison: Theory into Practice*. Dayton: Arlington Writers.

Hoy, W., & Kupersmith, W. J. (1985). The meaning and measure of faculty trust. *Educational and psychological research, 5*(1), 1-10.

Hoy, W., & Sabo, D. J. (1998). *Quality middle schools: Open and healthy.* Thousand Oaks, CA:: Corwin Press, Inc.

Hoy, W., Smith, P., & Sweetland, S. (2002). The Development of the Organizational Climate Index for High Schools: Its Measure and Relationship to Faculty Trust. *The High School Journal, 86*(2), 38-49.

Hoy, W., Tarter, C. J., & Kottkamp, R. B. (1991). *Open schools/healthy schools Measuring Organizational Climate*. Newbury Park: Sage Publications.

Hoy, W., & Woolfolk, A. (1993). Teachers' Sense of Efficacy and the Organizational Health of Schools. *The Elementary School Journal, 93*(4), 355-372.

Hughes, J. N., Barker, D., Kemenoff, S., & Hart, M. (1993). Problem Ownership, Causal Attributions, and Self-Efficacy as Predictors of Teachers' Referral Decisiosn. *Journal of Educational Psychology, 4*(4), 369-384.

Hutton, J. B. (1985). What Reasons Are Given by Teachers Who Refer Problem Behavior Students? *Psychology in the Schools, 22*, 79-82.

Individuals with Disabilities Act, (2004).

Individuals with Disabilities Education Act, 1400 1-203 (1997).

Ingalls, L., & Hammond, H. (1996). Prereferral School-Based Teams: How Effective Are They? *Rural Special Education Quarterly, 15*(2), 9-18.

Kauffman, J. M., & Hallahan, D. P. (2005). *Special Education-What It Is and Why We Need It*. Boston: Pearson Allyn and Bacon.

Kauffman, J. M., Lloyd, J. W., & McGee, K. A. (1989). Adaptive and Maladaptive Behavior: Teachers' Attitudes and Their Technical Assistance Needs. *The Journal of Special Education, 23*(2), 185-200.

Kavale, K. A., Forness, S. R., MacMillan, D., & Gresham, F. (1998). The Politics of Learning Disabilities: A Rejoinder. *Learning Disabilities Quarterly, 21*(4), 306-317.

Kavale, K. A., & Reese, J. H. (1991). Teacher beliefs and perceptions about learning disabilities: A survey of Iowa's practitioners. *Learning Disabilities Quarterly, 14*(141-160).

Kirk, S. A. (1962). *Educating Exceptional Children*. Boston: Houghton-Mifflin.

Knotek, S. (2003). Bias in Problem Solving and the Social Process of Student Study Teams: A Qualitative Investigation. *The Journal of Special Education, 37*(Spring), 2-14.

Knotek, S. (2003). Bias in Problem Solving and the Social Process of Student Study Teams: A Qualitative Investigation. *The Journal of Special Education, 37*(1), 2-14.

Kornblau, B. W., & Keogh, B. K. (1980). Teachers' perceptions and educational decisions. *New Directions for Exceptional Children, 1*, 87-101.

Lohman, M. (2000). Environmental inhibitors to informal learning in the workplace: a case study of public school teachers. *Adult Education Quarterly, 50*(2), 830101.

Losen, D., & Orfield, G. (2002). *Racial Inequity in Special Education*. Cambidge: Harvard Education Press.

Low, B., & Clement, P. (1982). Relationships of race and socioeconomic status to classroom behavior, academic achievement, and referral for special education. *Journal of School Psychology, 20*(2), 103-112.

Lyon, G. R. (1996). Learning Disabilities. *Special Education for Students with Disabilities, 6*(1), 54-76.

MacMillan, D. L., Gresham, F. M., & Bocian, K. M. (1998). Discrepancy between definition of learning disabilities and school practices: an empirical investigation. *Journal of Learning Disabilities, 31*(4), 314-326.

Mamlin, N., & Harris, K. R. (1998). Elementary Teachers' Referral to Special Education in Light of Inclusion and Prereferral: "Every Child is Here to Learn...But Some of These Children are in Real Trouble". *Journal of Educational Psychology, 90*(3), 385-396.

Mathes, P. G., & Torgesen, J. K. (1998). All children can learn to read: critical care for the prevention of reading failure. *Peabody Journal of Education, 73*(3-4), 317-340.

McCarthy, J. M. (1971). Learning Disabilities: Where have we been: Where are we going? In D. Hammill & N. Bartel (Eds.), *Educational Perspectives in Learning Disabilities*. New York: Wiley.

McIntyre, L. L. (1990). Teacher Standards and Gender: Factors in Special Education Referral? *Journal of Educational Research, 83*(3), 166-172.

Meijer, C. J. W., & Foster, S. F. (1988). The Effect of Teacher Self-Efficacy on Referral Chance. *The Journal of Special Education, 22*(3), 378-385.

Meyer, G., & Patton, J. M. (2001). *On Point...On the Nexus of Race, Disability, and Overrepresentation: What Do We Know? Where Do We Go?* Denver, Co: National Institute for Urban School Improvement.

Miller, P. (1991). Increasing Teacher Efficacy with At-Risk Students. *Equity and Excellence, 25*(1), 30-35.

Minority Students in Special and Gifted Education. (2002). Washington, DC: National Academy Press.

Moats, L. C., & Lyon, G. R. (1993). Learning Disabilities in the United States: Advocacy, Science, and the Future of the Field. *Journal of Learning Disabilities, 26*(5), 282-294.

NCES. (2003). *Digest of Education Statistics 2002*. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Nelson, C. M., Rutherford, R., Center, D. B., & Walker, H. (1991). Do Public Schools Have an Obligation to Serve Troubled Children and Youth? *Exceptional Children, 57*(5), 406-415.

Nelson, J. R., Smith, D. J., Taylor, L., Dodd, J. M., & Reavis, K. (1992). A Statewide Survey of Special Education Administrators Regarding Mandated Prereferral Interventions. *Remedial and Special Education, 13*(4), 34-39.

Newmann, F., Rutter, R., & Smith, M. (1989). Organizational Factors That Affect School Sense of Efficacy, Community, and Expectations. *Sociology of Education, 62*, 221-238.

O'Connor, E., Fish, M., & Yasik, A. (2004). The Influence of Teacher Experience on the Elementary Classroom System: An Observational Study. *Journal of Classroom Interaction, 39*(1), 11-18.

Osher, D., & Quinn, M. M. (2003). Policies Matter: For Students, for Teachers, and for Better Outcomes. *Preventing School Failure, 47*(2), 52-58.

Oswald, D. P., Coutinho, M. J., Best, A., & Singh, N. (1999). Ethnic Representation in Special Education: The Influence of School-Related Economic and Demographic Variables. *The Journal of Special Education, 32*(4), 194-206.

Peterson, A. M. (1997). Aspects of School Climate: A Review of the Literature. *ERS Spectrum*, 36-42.

Podell, D. M., & Soodak, L. (1993). Teacher Efficacy and Bias in Special Education Referrals. *Journal of Educational Research, 86*(4), 247-253.

Pugach, M. C. (1985). The Limitations of Federal Special Education Policy: The Role of Classroom Teachers in Determining Who is Handicapped. *The Journal of Special Education, 19*(1), 123-136.

Pugach, M. C., & Johnson, L. J. (1989). Prereferral Interventions: Progress, Problems, and Challenges. *Exceptional Children, 56*(3), 217-226.

Reschly, D. J., & Hosp, J. (2004). State SLD Identification Policies and Practices. *Learning Disabilities Quarterly, 27*(4), 197-213.

Safran, S. P., & Safran, J. S. (1984). Elementary Teachers' Tolerance of Problem Behaviors. *The Elementary School Journal, 85*(2), 237-243.

Safran, S. P., & Safran, J. S. (1996). Intervention Assistance Programs and Prereferral Teams. *Remedial and Special Education, 17*(6), 363-369.

Schrag, J., & Henderson, K. (1996). *School-Baed Intervention Assistance Teams and Their Impact on Special Education* (Final Report). Alexandria: National Association of State Directors of Special Education.

Scruggs, T. E., & Mastropieri, M. A. (2002). On Babies and Bathwater: Addressing the Problems of Identification of Learning Disabilities. *Learning Disabilities Quarterly, 25*, 155-168.

Shinn, M. R., Tindal, G. A., & Spira, D., A. (1987). Special Education Referrals as an Index of Teacher Tolerance: Are Teachers Imperfect Tests? *Exceptional Children, 54*(1), 32-40.

Sindelar, P. T., Griffin, C. C., Smith, S. W., & Watanabe, A. (1992). Prereferral Intervention: Encouraging Notes on Preliminary Findings. *The Elementary School Journal, 92*(3), 245-258.

Skiba, R., McLeskey, J., Waldron, N., Grizzle, K., & Bartley, J. (1993). The Context of Failure in the Primary Grades: Risk Factors in Low and High Referral Rate Classrooms. *School Psychology Quarterly, 8*(2), 81-98.

Spear-Swerling, L., & Sternberg, R. J. (1996). *Off Track*

When Poor Readers Become "Learning Disabled". Boulder: Westview Press.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy Implementation and Cognition: Reframing and Refocusing Implementation Research. *Review of Educational Research, 72*(3), 387-423.

Swap, S. M. (1974). Disturbing Classroom Behaviors: A Developmental and Ecological View. *Exceptional Children, 41*, 163-172.

Tagiuri, R. (1968). The concept of organizational climate. In H. University (Ed.), *Organizational climate: Explorations of a concept* (pp. 1-32). Cambridge: Division of Research, Graduate School of Business Administration.

Tobias, S., Cole, C., Zibrin, M., & Bodlakova, V. (1982). Teacher-Student Ethnicity and Recommendations for Special Education Referrals. *Journal of Educational Psychology, 74*(1), 72-76.

Tobias, S., Zibrin, M., & Menell, C. (1983). Special Education Referrals: Failure to Replicate Student Teacher Ethnicity Interaction. *Journal of Educational Psychology, 75*(5), 705-707.

Tschannen-Moran, M., & Barr, M. (2004). Fostering Student Learning: The Relationship of Collective Teacher Efficacy and Student Achievement. *Leadership and Policy in Schools, 3*(3), 189-209.

Tymitz, B. L. (1984). The case for reasonable intervention: Training implications for judiciouis referral and placement decisions. *Teacher Education and Special Education, 7*, 12-19.

Vardill, R., & Calvert, S. (2000). Gender Imbalance in Referrals to an Educational Psychology Service. *Educational Psychology in Practice, 16*(2), 213-223.

Voltz, D., Brazil, N., & Scott, R. (2003). Professional Development for Culturally Responsive Instruction: A Promising Practice for Addressing the Disproportionate Representation of Students of Color in Special Education. *Teacher Education and Special Education, 26*(1), 63-73.

Wehmeyer, M., & Schwartz, M. (2001). Disproportionate representation of males in special services: biology, behavior, or bias? *Education and Treatment of Children, 24*(1), 28-45.

Woolfolk, A., Rosoff, B., & Hoy, W. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching and Teacher Education, 6*(2), 137-148.

Ysseldyke, J. (2001). Reflections on a Research Career: Generalizations from 25 Years of Research on Assessment and Instructional Design Making. *Exceptional Children, 67*(3), 295-309.

Ysseldyke, J., Christenson, S., Pianta, B., & Algozzine, B. (1983). An Analysis of Teachers' Reasons and Desired Outcomes for Students Referred for Psychoeducational Assessment. *Journal of Psychoeducational Assessment, 1*(1), 73-83.

Ysseldyke, J., Thurlow, M., Graden, J., Wesson, C., Algozzine, B., & Deno, S. (1983). Generalizations from five years of research on assessment and decision making. *Exceptional Education Quarterly, 4*, 75-97.

Ysseldyke, J., Vanderwood, M., & Shriner, J. (1997). Changes over the Past Decade in Special Education Referral to Placement Probablility: An Incredibly Reliable Practice. *Diagnostique, 23*(1), 193-201.

Zigmond, N. (1993). Learning disabilities from an educational perspective. In G. R. Lyon, D. B. Gray, J. F. Kavanaugh & N. A. Krasnegor (Eds.), *Better understanding learning disabilities: New views from research and their implications for education and public policies* (pp. 251-272). Balitmore: Brookes.

Zuriff, G. E. (1996). The Myths of Learning Disabilities: The Social Construction of a Disorder. *Public Affairs Quarterly, 10*(4), 395-405.