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Prototypical Thinking of Teachers Regarding Students Labeled With a Disability

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PROTOTYPICAL THINKING OF TEACHERS

REGARDING STUDENTS LABELED WITH A DISABILITY

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Abstract

With recent changes in the legislative directions (NCLB and IDEIA 2004) affecting education and the support to students with special needs, new thoughts have emerged in the identification, assessment, placement, and instruction of these students. The purpose of this study was to explore the prototypical thinking of teachers toward students with disabilities based on the categorical labels used in the classification of students. Social Cognitive and Ecological Theory provided a structure for a risk-resiliency framework to guide the research. Regular (n=18) and Special Education (n=18) teachers rated the categorical label stimuli on the two constructs of risk and resiliency. A repeated measure ANOVA was used to examine the differences in rating between the two teacher groups and a multidimensional scaling analysis (MDS) provided a topographical perspective of the neighborhood and dimensional aspects of the prototypes for each group on the two constructs. Results showed no differences between the groups based on the ANOVA however a unidimensional and the multidimensional analysis show distinct groupings mainly along physical-cognitive dimensions. The two teacher groups differed in their views of risk and resilience. A model of risk-resiliency is presented.

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CHAPTER 1: INTRODUCTION

Background of the Study

An educational opportunity for students with special needs has existed in the United

States for many years and has undergone an evolution in the identification, classification, and

delivery of services (Jackson & Veeneman-Panyan, 2002; Lerner, 2003). Legislative actions and

recent national educational policy codified in legislation like the No Child Left Behind Act of

2001 (NCLB) and the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004

have put an emphasis on definitional, assessment, placement and accountability issues (Yell,

2006). Public policy issues regarding disproportionate representation of minorities (Patton,

1998), instructional practices (Ferguson, 1995; Kavale & Forness, 2000; Kavale, 2002; Lerner,

2003) including the meta-analysis of interventions for students with learning disabilities

(Swanson, Hoskyn, & Lee, 1999), achievement (Dunn & Shapiro, 1999; Lerner, 2003; Oliver &

Steenkamp, 2004; Lackaye & Margalit, 2006), self-esteem (Barkley, 1990; Barkley, Fisher,

Edelbrock, & Smallish, 1990; Riddick, Sterling, Farmer, & Morgan, 1999; Weyandt, 2001)

illustrate the breadth of thinking and research in the field.

Based on the seminal work of Werner and Smith's (1982, 1992, 2001) longitudinal

examination of risk and protective factors associated with students with learning disabilities

Wong (2003) proposed using a risk-resiliency framework to examine the contributions the

protective factors and to explore for other risk factors. The continued effort to search for the

underlying causes, risk and protective factors that effect outcomes is on-going in various areas of

disabilities in children (Barkley, 1997; Goldstein & Goldstein, 1998; Torgesen, 1999; Kernberg,

Weiner, & Bardenstien, 2000). Margalit (2003) discussed a move from the deficit model to an

"empowering model" (p. 83) in the understanding of students with disabilities. Bryan (2003) posits the risk-resiliency model provides a more optimistic outlook and that the deficit model has provided a systematic study of the characteristics of children with disabilities of learning.

Werner (1993) offered five areas providing protection to the individual with a learning disability. One area was temperament, which allowed for positive reaction from parents, friends, and teachers. Two, values and skills was identified which allowed the individual to use their talents well and build a positive view of themselves including "a strong sense of self-efficacy and internal locus of control" (Wong, 2003, p. 69). The third factor, parents who provided structure and support and a fourth related area being a supportive adult who demonstrated confidence in the individual. Lastly, the fifth factor was timely opportunities which came at critical junctures in the development and education of the individual.

<div align="center">Statement of the Problem</div>

The impact of disabilities across the lifespan in academic, social, and cognitive areas is well documented (Barkley, 1990; Goldstein, 1997; Kauffman, 2001; Jackson, Veeneman-Panyan, 2002; Lerner, 2003; Drew & Hardman, 2007). Legislative efforts over the years as well as reform movements (Kavale & Forness, 1995, 2000; Lerner, 2003) have focused on procedural, delivery, and accountability issues. Wong (2003) has offered a risk-resiliency model to further explore and enrich the understanding we have in regard to students with learning disabilities. Wiener (2003) commented on Wong's view of her definition of risk by explaining it goes beyond learning disabilities to embrace other disability areas since they impact on the normal development of the individual. Wiener (2003) also reinforced the reciprocal nature of the child-environment interaction.

Bryan (2003) points out risk factors predict many negative outcomes (i.e. dropout rates, self-esteem issues, life dissatisfaction, poor interpersonal relationships, and underemployment) however "others have reported more positive outcomes in adult life" (p. 96; see also Werner & Smith, 1982,1992,2002; Adelman & Vogel, 1990). Many have pointed to a positive adult in their life that provided emotional support and belief in their ability especially during the school years (Werner & Smith, 1982, 1992, 2002; Wiener, 2002). In a survey of more than 90,000 adolescents, Bearman, Jones, & Undry (1997) report the school can be a protective environment for students if they feel cared for by the adults at the school and feel they are part of the school's culture.

Increases in the number of students with disabilities being served in regular classrooms (Lerner, 2003; United States Department of Education, 2000) bring them into contact with regular classroom teachers and normally developing peers. "Wong stresses that we need to examine the impact of teacher beliefs and practices and peer attitudes and behavior on social and emotional adjustment ... and the impact of the behavior of children with LD [learning disability] on their teachers and classmates" (Wiener, 2003, p. 78).

Clark and Artiles (2000) found differences in teachers in the area of rewards and punishment, disability status, and expectations of failure. In the area of referral, Bianco (2005) found that teachers were influenced by the labels associated with the students. Teacher expectations and their ability to provide support during the academic years can be considered as part of the protective factors in a risk-resiliency framework.

Purpose of the Study

The multifaceted nature of exploring teacher perceptions of students with disabilities where interaction is reciprocal requires drawing from a social cognitive perspective (Bandura, 1977; Moskowitz, 2005; Zebrowitz, 1990) mindful of the ecological implications (Bronfenbrenner, 1979) in risk-resiliency framework (Wong, 2003).

The purpose of the study is to examine the prototypical thinking of teachers regarding students labeled with a disability based on their perceptions of academic risk and resiliency.

Questions of the Study

Students with special needs are identified for services with categorical labels (Lerner, 2003: Yell, 2006). Germain (1991) points to the consequence of labeling as "less positive interaction with the teacher, increased peer rejection, and an emergence of 'learned helplessness' on the part of the child" (p. 285). From a social cognitive perspective, the prototype represents a "set of most common features that are most probably found in a category member" (Moskowitz, 2005, p. 164) and provides expectancies that vary with experience.

The study explores two questions:

1. How do regular teachers perceive the similarities in academic risk and resilience of students based on the categorical labels (stimuli) used to identify special needs students?

2. Is there a difference between regular teachers and teachers in high incidence special education in regard to their evaluation of risk and resilience of students based on the categorical label used?

Nature of the Study

To examine the differences of the prototypes of regular education teachers within a framework of risk-resiliency, a descriptive design using multidimensional scaling, which Jones

and Koehly (1993), describe as providing a relief from the overuse of "univariate analysis of variance"(p. 95) which has led to "oversimplified and incomplete understandings of social, cognitive, developmental, and behavioral processes" (p. 95). The authors describe typical multivariate analysis techniques as useful but limited when "modeling the domains where subject's perceptions of stimuli and stimulus relationships have been the focus" (p. 95). A proximity measure (Davison, 1983) will be created and used to examine the teachers prototypical thinking as to the academic risk and resiliency based on the priming of the categorical labels used in special education which are seen by teachers (i.e. [LD] Learning Disability). The categorical labels are the stimuli. The development of the questionnaire will utilize a rotating standard method (Davison, 1983) for the development of the pairs of stimuli (i.e. LD v. Deaf) to elicit a similarity on (a) risk, and (b) resiliency judgment. Davison (1983; see also Romney, Shepard, & Nerlove, 1972a, 1972b) describes how multidimensional scaling using proximity measures are used to study how the perceptions of subjects or groups perceive others. Further, a simple unidimensional scale of judgments by regular and special education teachers will be utilized to aide in the interpretation of the dimensions (Dunn-Rankin, Knezek, Wallace, & Zhang, 2004) and provide for an examination of the differences between regular and special education teachers on the categorical labels influence on their perception of risk or resilience utilizing an analysis of variance (ANOVA, Field, 2005).

<center>Significance of the Study</center>

Wong (2003) proposed the use of a risk-resiliency model for furthering the research into the field of learning disabilities. Weiner (2003) responded that risk factors extend to other disability types. Weiner (2003) also pointed out Wong's assertion that the child-environment

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interaction calls for research to "examine the impact of teacher beliefs and practices" (p. 78). The examination of prototypical thinking would add to the base of literature in this area. Further, an understanding of teachers' perceptions would allow for pre-service or in-service training of teachers on the risks posed by different categories of disabling conditions but also the resilience factors including the supportive role an adult plays in the framework (Bryan, 2003).

<div align="center">Definition of Terms</div>

Judgments

Judgments are objective ratings of similarity, order, or value (Dunn-Rankin, Knezek, Wallace, & Zhang, 2004, p. 9).

Multidimensional Scaling (MDS)

MDS is a set of multivariate statistical methods for estimating the parameters in and assessing the fit of various spatial distance models for proximity data (Davison, 1983, p.2).

Prototype

A representation detailing a typical category member, summarized by the set of most common features that are most probable to be found in a category member (Moskowitz, 2005, p. 164).

Proximities

Proximities are numbers that indicate how close or far apart objects appear (Dunn-Rankin, Knezek, Wallace, & Zhang, 2004, p. 37)

Regular Education Teacher

A regular education teacher is a teacher certified or licensed by a state to teach students in public or non-public schools at various grade or age levels.

Resiliency

The use of protective factors, environmental or personal, that stimulate the positive development of a person at risk (Wiener, 2003, p. 77).

Risk

Risk factors are any personal or environmental factor that threatens the normal development of the individual (Wiener, 2003, p. 77).

Special Education Teacher

A special education teacher is a teacher certified or licensed categorically or non-categorically by a state to teach students with special needs at various age or grade levels.

Assumptions & Limitations

Assumptions

1. Age, race, and gender are not factors in the participants.

2. Time and space effects are minimal in the responses to the questionnaire (Davison, 1983).

3. "There is a relationship between the psychological concept of similarity and distance" (Davison, 1983, p.2)

4. Background experiences in prior training of the participants are equivalent.

Limitations

Generalizability will be limited based on a sample drawn from one university site. Although, McCaughey and Strohmer (2005) argue that much research into attitudes has been conducted on college students and in particular research toward individuals with disabilities and that these individuals become the next generation of professionals interacting in and influencing their environment.

Organization of the Remainder of the Study

The balance of the study will be organized into topical chapters. Chapter two will be a review of the related literature. It will include discussions of the theoretical underpinnings of the study, foundations of special education including legal and educational, risk-resiliency, and the use of multidimensional scaling in examining personality variables. Chapter four will provide results from the data gathered, while Chapter 5 will provide a discussion of the results and their implications.

CHAPTER 2: RELATED LITERATURE

The purpose of this chapter is to present material related to the area of serving students with special needs. The theoretical foundations in social cognitive (Bandura, 1977, 2001), ecological theory (Bronfenbrenner, 1979), and a risk-resiliency framework (Wong, 2003) are explored as the underlying theoretical position. Lastly, usage of MDS as a methodological approach is provided.

The fields of psychology and education, including the education of students with special needs, have evolved over time (Hunt, 1993; Lerner, 2003; Kaufman, 2001; Jackson & Veeneman-Panyan, 2002; Drew & Hardman, 2007). The field of special education, working with the growing numbers of students (Lerner, 2003; Kaufman, 2001; Drew & Hardman, 2007) classified into multiple disability categories (see table 1) draws on the fields of psychology to provide a theoretical basis for the understanding of students with special needs and their instruction (Lerner, 2003; Jackson & Veeneman-Panyan, 2002; Drew & Hardman, 2007). The evolutionary process driven by the research in both fields still provides for controversy and change in the classification, delivery system models, and instruction provided to those with special needs (Swanson, H., Hoskyn, M, & Lee, C., 1998; Jackson & Veeneman-Panyan, 2002;Vaughn & Linan-Thompson, 2003; Odom & Wolery, 2003; Zigmond, 2003; Florian, et al., 2006; McLaughlin, et al., 2006).

Foundations of Special Education

When individuals are affected by a condition chronic or acute that prevents their ability to engage in normal activities (Cavanaugh & Blanchard-Fields, 2002), we consider it as a disabling condition. Although this is a life span issue in which the disabling condition can occur later in

life and affect one's ability with concomitant implications for mental health (Verbrugge, 1994;

Cavanaugh & Blanchard-Fields, 2002; Sue & Sue, 2003), the focus is the discussion of

disabilities in the school age population which according to the U.S. Department of Education

(2000) an estimated 10.83% of school age children are enrolled in or classified in some disability

category (see Table 1).

Table 1

IDEA Classifications and Percent of Students Classified

Categorical Label	% Classified	% within Disability
Learning disability	5.5	51.1
Speech & Language	2.3	20.1
Mental retardation	1.2	11.4
Emotional disturbance	0.9	8.6
Multiple disability	0.2	1.7
Hearing impairment	0.1	1.3
Orthopedic	0.1	1.3
Other health impairment	0.3	3.1
Visual impairment	0.05	0.5
Autism	0.07	0.6
Deaf-blind	0.01<	0.1<
Traumatic brain injury	0.02	0.2
All disabilities	10.83	100.0

Note: Adapted from Lerner (2003) & U.S. Department of Education (2000). Totals affected by rounding.

Further, the sociopolitical aspects of serving children with disabilities has changed and teachers, counselors, and administrators have come into more contact with individuals with disabilities and there is more interaction between those serving students with disabilities necessitating new roles, competencies and understandings (Fuchs & Fuchs, 1994; Hallahan & Kaufman, 2000; Lerner, 2003).

Historical Perspective

Lerner (2003) posits a historical perspective based on temporal phases. These phases take their foundation from several disciplines including the fields of psychology (Kaufman, 2001; Jackson & Veeneman-Panyan, 2002; Lerner, 2003; Drew & Hardman, 2007) and "each contribution added to and redirected earlier theories and, in turn, inspired further research and investigation" (Lerner, 2003, p.34). Based on Lerner (2003, p. 34-53), there are four distinct phases.

Foundation Phase. This phase is from 1890 to 1930 and is characterized by the early studies of the brain. This would include the work of Broca, Wernicke, Goldstein, Werner and Strauss. These seminal investigations provided the roots for the study of children in relation to brain injury and led to an early emphasis on perceptual difficulties and etiological concerns (Gaddes & Edgell, 1994).

Transition Phase (1930-1960). Based on the work with adults returning from the war (Gaddes & Edgell, 1994; Lerner, 2003), this phase is characterized by an increase in the study of children as well as the development of assessment instruments, and teaching methods. The pivotal work of Orton and Fernald in the area of reading was influential as was the research,

advocacy and methodology of Frostig, Myklebust, Cruickshank, and Kirk. It was also during this phase that issues in definition begin to appear (McCarthy & McCarthy, 1969; Lerner, 2003).

Integration Phase (1960-1980. The resulting research led to the development of methodology and increased advocacy to serve children being identified. This period shows growth in school based programs. With the influence of the Civil Rights movement (Yell, 2006) legislation is proposed. Also during this period, definitional issues became paramount as legislation was being considered. Kirk and Cruickshank were influential as were the fledgling parent groups and organizations being developed to provide advocacy. This was the real emphasis during this period and integration of the ideas was important but the hallmark of this time is the advocacy for educational programs, identification, and legislation.

Current Phase (1980-present). Lerner (2003) characterized this phase as new directions. She explains it with a potpourri of elements – legislation, inclusive movement, diversity issues, nonverbal learning disabilities, Asperger Syndrome, high stakes testing, and technology. However, it could be re-examined into two phases of a shorter duration. 1980 to 1990 would become an expansion phase with increase in child find activities leading to greater identification, the addition of new disorders to the categories under the legislation (Yell, 2006), advances in research, research methodologies, and the technological advances applied to the research (Kavale & Forness, 1995, 2000). From 1990 to the present, would become the accountability phase. This is characterized by changes in the law, alignments with legislation such as the No Child Left Behind Act, response to intervention (RTI), curricular based measurement (CBM) and high stakes testing (Shapiro, 2004; Yell, 2006).

Legislative Efforts

Educational practices including identification, assessment, classification, and placement of students in special education have been codified in legislation since 1973 with the passage of the All Handicap Children's Act (PL 94-142) through the current Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 (Lerner, 2003; Overton, 2006; Yell, 2006). Overton (2006) points out

> the 2004 Amendments add a component to the IEP [individual educational plan] that represents further alignment with the No Child Left Behind Act. In the No Child Left Behind Act, there is emphasis on using research based interventions and instructional methodology… the IEP should include, to the extent practical, educational programs and strategies, that are based upon peer-reviewed research. …making adequate progress in educational achievement is at the core of educational accountability. (p. 61)

Disability Characteristics

Churton, Cranston-Gingras and Blair (1998) point out schools continue to operate from a white, middle class perspective. Earlier, table 1 provided the classification areas and numbers of children served. A competent practitioner would consider certain factors before determining a student has a disability (Churton, Cranston-Gingras & Blair, 1998). Langdon (as cited in Churton, Cranston-Gingras & Blair, 1998) lists (a) length of residency in the United States, (b) attendance disruption, (c) types of classrooms attended, and (d) language use as salient factors to consider.

Although labeling is consider by some as stigmatizing (Anderson, Keller & Karp, 1998; Manning & Baruth, 1996) it is a necessity for providing services to individuals with disabilities

in an educational setting (Turnbull, 1993; Lerner, 2003; Yell, 2006). In the classification of students, there are two broad areas, that of high incidence and low incidence disabilities (Friend & Bursuck, 1999). The high incidence, based on the proportions being served under IDEA, includes speech or language disabilities, learning disabilities, emotional disturbance, and mild cognitive impairments accounting for 90% of the students served. As such, these varying disabilities share some commonality in characteristics. The low incidence disabilities tend to be more diverse in the impact of the disabling condition and comprise approximately 10% of the students being served under IDEA. Categorically, they are students with cognitive disabilities [mental retardation], hearing impairments, orthopedic impairments, deaf-blindness, autism, traumatic brain injury, and other health impairments (Friend & Bursuck, 1999; Lerner, 2003).

Cognitive Disabilities. The characteristics of this group are below average intellectual functioning, poor adaptive skills, and poor academic skills (Friend & Bursuck, 1999). Generally, the implications to the practitioner would be dependence on support systems like the family, low level of verbal comprehension, need for immediate short term goals, concrete, tangible and structured approach.

Hearing Impairment. There is some diversity in this group of individuals since the impact audiologically can be from mild hearing loss to profound deafness (Hallahan & Kaufman, 2000; Friend & Bursuck, 1999). The impact is on communication, language development, and academic performance. There are recognized social-emotional impacts related to social interaction (Martin, 1991).

Orthopedic Impairments. Generally this group can be diverse in the impact and severity of the condition. It affects mobility and motor functions. There can be adverse academic and

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social-emotional issues (Friend & Bursuck, 1999; Hallahan & Kaufman, 2000). These authors point out physical, language and communication barriers may exist that the practitioner would have to be sensitive to and assess the impact. There can be an impact in self-regulation or completing tasks independently so there may be a need to satisfy personal needs and be action oriented (Friend & Bursuk).

Vision Impairment. There is a range of impact within the group from partially sighted to blind. It impacts mobility and can adversely affect educational performance (Friend & Bursuck, 1999).

Speech and Language Impairments. Speech disorders involving articulation, fluency, and voice can cause distress in the speaker and listener, call attention to the individual, and create interference with communication (Friend & Bursuck, 1999; Hallahan & Kaufman, 2000). Language disorders occur with word expression and reception of spoken and written language (Friend & Bursuck, 1999; Lerner, 2003). Implications may be a need for a concrete, tangible approach, and awareness of communication including poor comprehension of directions, retention of information, and difficulty in discussing abstract, temporal, and spatial concepts (Friend & Bursuck, 1999).

Learning Disabilities (LD). LD is the largest of the categorical areas being served in schools (Lerner, 2003). Normal intellectual functioning, disparity between ability and academic performance not due to a physical problem, cultural, or economic disadvantage are characteristics underlying this large group (Friend & Bursuck, 1999; Hallahan & Kaufman, 2000; Lerner, 2003). The impact is on academic achievement, use of written materials, written communication and can have concomitant social-emotional problems (Lerner, 2003).

States under IDEIA 2004 and the recent 2006 regulation implementation are re-examining the severe discrepancy model for identification of a severe learning disability to a more scientifically based model designated as response to intervention (RTI) although not specifically defined in the legislation, however the eligibility statements are specific (Zirkel & Krohn, 2008).

Social-Emotional Disturbance. This group is characterized by the inability to learn although there is no identified physical or intellectual basis, poor ability to form relationships, inappropriate behavior or feelings, and a general mood of unhappiness or depression (Hallahan & Kaufman, 2000). The impact is in educational performance and forming relationships with peers and adults. To the practitioner, immediate short range goals, structured approach, action orientation, and locus of control--external orientation (Levin, 1992) are variables for consideration.

Autism. Hallahan and Kaufman (2000) describe the characteristics as being difficult to differentiate in children and not present in every child classified. They list problems with social interactions, communication, perception, and cognition. Further, behavioral issues involving getting along with others, self-injurious, self-stimulation, and aggression may be present.

Impact

Learning, cognitive, and behavior related disabilities make-up the high incidence disability categories (see Table 1). Seen in the descriptions of characteristics, students with these disabilities share some common characteristics (Churton, Cranston-Gingras, & Blair, 1998). According to the authors, academic functioning, intellectual functioning, cognitive behavior, and social-emotional factors are impacted. Cognitive behaviors of (a) attention with the ability to

focus on relevant stimuli (Zentall, 1993) and sustaining attention (Barkley, 1997; Weyandt, 2001), (b) memory with short term memory difficulties (Lerner, 2000), (c) poor use of rehearsal strategies (Swanson & Cooney, 1991; Lerner, 2000), (d) self-regulation with poor task completion and persistence (Barkley, 1997; Lerner, 2000; Weyandt, 2001), and (e) generalization, with problems applying skills across settings (Ellis, Lenz, & Sabornie, 1987; Lerner, 2000) while social-emotional factors of (a) locus of control (Levin, 1992) although currently called into question (Mamlin, Harris, & Case, 2004), (b) motivation with learned helplessness an issue (Smith & Luckasson, 1995), (c) peer relations, with poor peer relations and peer rejection (Bybee & Zigler, 1992; Barkley, 1997; Weyandt, 2001; Bloomquist & Schnell, 2002), and (d) self-esteem, with tendencies for low self-esteem (Drew, Hardman, & Logan, 1996; Barkley, 1997; Lerner, 2000) impact on the individual's development. Most notably, Churton, Cranston-Gingras, and Blair (1998) point to the increase in placement into the regular classroom with "the prevalent findings of rejection and isolation by peers are disturbing" (p. 31). This includes, "the perpetual cycle of academic failure with its inevitable byproduct of poor self-worth tragically traps the many low achieving students into ... learned helplessness" (Churton, Cranston-Gingras, and Blair, 1998, p.31). In a more general statement, Germain (1991) posits that a disability may contribute to "learning difficulties, prejudice or overprotection on the part of the teachers, rejection by peers, ... and problems in psychosocial adaptation" (p. 284) leading to concerns by the children of competence and self-worth.

Theoretical Concerns

Lerner (2003) explains there is a need for theory in order to aid in the understanding of individuals with learning disabilities and has applicability to the other areas of special education as well as regular education. As we have seen in the historical foundations, the development of special education has been dependent on the theories generated by the research in the various fields of psychology and as Lerner specifies, "theory building is a process" (p. 187). Underscoring the use of theory in the development of educational ideology, Norwich (2000) describes the relationship to "psychological assumptions" (p.37). These are basic assumptions "about the individual person, and his or her functioning, development, and relationship to biological and social aspects of being" (p. 38). These assumptions are many times dichotomized as (a) nativist-interactionist, (b) reductionist-holist, (c) objectivist-constructivist, and (d) individual focus-social focus or more globally into mechanist-organismic (Hunt, 1993; Norwich, 2000). Norwich (2000) points out "there is no place for simple dichotomies" (p.74).

Perusing Ormrod's (2003) educational psychology text one can see behavioral, social learning theory, social cognitive theory, developmental and cognitive theories being emphasized. Similarly, Lerner (2003) emphasizes the influence of developmental, behavioral, and cognitive theories in regard to students with special needs. In a meta-analysis of instructional interventions with students with learning disabilities Swanson, Hoskyn, and Lee (1999) describe how the influence of changing theories have influenced and created questions about intervention strategies. Their multi-page synopsis table of studies (see Swanson, Hoskyn, & Lee, 1999, table 1, p. 41-53) reinforces the breadth of theories drawn from various psychological fields of study.

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Social Cognitive Theory

Bandura (1977) presented a perspective on the development of human learning that "emphasizes the prominent roles played by vicarious, symbolic, and self-regulatory processes in psychological functioning" (p. vii) and provides the conceptualization of behavior in relationship to "cognitive, behavioral, and environmental determinants" (p. vii). Expanding on this and differentiating the underlying theory, Bandura (1986) posited social cognitive theory based on the concept of reciprocal determinism and the interaction between personal factors, behavior, and environment (triadic reciprocality, Pajares, 2002). Social cognitive theory then provides a basis for clinicians and educators to provide intervention (Pajares, 2002).

Efficacy Belief. Bandura (1986), in social cognitive theory, viewed outcome expectancy and "efficacy expectations" (p.79) as different with the outcome based on one's belief a behavior has a certain outcome while efficacy expectations (self-efficacy) "is the conviction that one can successfully execute the behavior required to produce the outcomes" (p. 79). To accomplish this, Bandura (1994) provides the individual can (a) experience successes while "failures undermine it" (p.72); (b) create or strengthen their self-efficacy through vicarious experiences with social models; (c) be provided social persuasion which provides motivation for success and the effort to sustain it, and (d) have stress reactions reduced to improve mood which enhances the "judgment of their personal efficacy" (p. 73). Bandura and Locke (2003) provide a review of several meta analyses to support the assertion "perceived self-efficacy and personal goals enhance motivation and performance attainment" (abstract).

Personal Agency. Bandura (2001) stated, "social cognitive theory subscribes to a model of emergent interactive agency" (p. 4). Human or personal agency embodies (a) intentionality

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including self-motivation and planning; (b) forethought in which a "future time perspective" (p.7) provides "direction, coherence, and meaning in life" (p.7); (c) self-reactiveness which includes motivation and self-regulation along with the ability to self-monitor tempered by moral agency which Bandura describes as "inhibitive and proactive" (p.9); Finally, (d) self-reflectiveness, which allows for the self-examination of one's own functioning and ability. Bandura describes this mechanism as "none is more central or pervasive than people's beliefs in their capability to exercise some measure of control over their own functioning and over environmental events" (p.10).

Fortuity. Although individuals exercise control over their lives and environment, it is recognized that not all events are controlled. Bandura (2001) describes the concept of fortuity as events not happening by design but control of its effects is possible.

Social Cognitive Theory & Education

Since social learning theory provides a basis for the view of learning as a complex interaction of the individual, behavior, and environment that is reciprocal and based on the pervasive concept of personal agency (Bandura, 1977, 1986, 1994, 2001). It has applicability in the field of education (Pajares, 2002).

Academic Functioning. Education provides for the cognitive development of the individual and self-efficacy beliefs and their influences play a vital role (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Bandura, et al.'s (1996) conclusion were multifaceted with relationships between socioeconomic levels, parental beliefs in their child's academic efficacy, and the child's self efficacy related to higher academic achievement, prosocial behavior, low depression, and "the ability to withstand transgressive conduct and adherence to moral self-

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sanctions" (p.1213). Support in this area is seen in the study of Caraway, Tucker, Reinke, and Hall (2003) which concluded "the more confident adolescents are about their general level of competence, the more likely they are to get better grades in school and to be more engaged in various aspects of school" (p. 423). Goddard, Hoy, and Hoy (2004) expand on the area in reviewing and explaining the relationship of the collective efficacy beliefs of a school and in particular the teacher self-efficacy beliefs toward instruction in which the collective efficacy was strong influence on teacher self-efficacy beliefs. Bong's (2004) exploration was subject specific (math) and found students form subject specific motivational beliefs and these are moderately correlated to self-efficacy which also extends to goal setting (Schunk, 1994)

In the area of students with special needs, in particular students with learning disabilities, research has explored the effects of self-efficacy with (a) goal setting (Schunk, 1985), (b) affect and effort (Lackaye, Margalit, Ziv, & Ziman, 2006), and (c) achievement and effort (Lackaye & Margalit, 2006). The general conclusions of these efforts were a lower self-efficacy and effort or differences between the student with special needs and the normally developing student on these variables. Schunk's (1985) experimental approach found that participating in goal setting related to higher self-efficacy and math achievement (subtraction). Additionally, students with special needs overestimate their academic self-efficacy (Klassen, 2002; Stone, & May, 2002; Meltzer, Roditi, Houser, & Perlman, 1998). Taking a qualitative approach, Klassen and Lynch (2007) reported students with learning disabilities felt low in their self-efficacy but adequate in their calibration of self-efficacy while their teachers felt they were overconfident. Further the students felt verbal persuasion important while contributing failure to lack of effort. The teachers on the other hand contributed it to uncontrollable deficits.

Environment. Jackson and Veeneman-Panyan (2002) point out "learning is co-constructed within a social context, and what is learned defines social membership and connects learners with each other and with the culture as a whole" (p. 46). The relationships a student forms extends over multiple environments and different relationships (Murray & Greenberg, 2006). The authors examined (a) caregiver-child, (b) teacher-child, and (c) peer relationships across school and neighborhood contexts involving children with high incidence disabilities. The general findings were social relationships with parents, peers and teachers along with school and neighborhood issues are related to "the social, behavioral, and emotional adjustment of students with high incidence disabilities" (p.228). The authors listed the student's perception of their school environment as a major contributor to the student's rating of confidence. Downer, Rimm-Kaufman, and Pianta (2007) provided two areas of classroom environments, classroom quality and instructional contexts, as mediating behavioral engagement. Similarly, students with emotional or behavior disorders make effective instruction difficult for the teacher and this leads to poor academic outcomes (Sutherland, Lewis-Palmer, Stichter, & Morgan, 2008). These authors point out classroom contextual factors are also involved.

Ecological Theory

The complex interactions identified in social cognitive theory (Bandura, 1977, 1986, 1994) help frame the understanding of Bronfenbrenner' (1979) statement about ecological theory,

> lying at the very core of an ecological orientation and distinguishing it most sharply from
>
> accommodation between a growing human organism and its immediate environment and

the way by which this relation is mediated by forces emanating from more remote regions

in the larger physical and social milieu. (p.13)

Elements of Ecological Theory. Underpinning the theory is the idea that human

development involves the progression of the individual through changing environments in which

the processes are affected by interaction within and between the settings and "by the larger

contexts in which the settings are imbedded" (Bronfenbrenner, 1979, p.21). It can be seen that

the individual develops dynamically, is influenced by the environment that is bidirectional

(reciprocity), and the "ecological environment" (p.22) is multilayered. This is illustrated in the

formula $D_t = f(t-p)(PE)(t-p)$ where D is development which [P] the person goes through while

interacting with the environment [E]. This is mediated by [t] time when the outcome is observed

and the time period [t-p] of the interaction that produced the developmental outcome (see

Bronfenbrenner, 1992, p. 190-191).

The environmental contexts are a hierarchy of environmental systems and move from

proximal to distal in relation to the individual. They are: (a) the microsystem, (b) mesosystem,

(c) exosystem, and (d) macrosystem (Bronfenbrenner, 1979). Throughout the lifespan, the

individual transitions through this "ecological space" and becomes a "product and producer of

developmental change" (p.27). Bronfenbrenner described the need to examine the individual in

relationship to these contexts.

Ecological Theory & Education

Bronfenbrenner (1979) emphasized the need to shape research in light of the ecology in

which the individual is interacting. According to Sontag (1996) ecological theory provides a

context to explore the development of children with disabilities. Webber and Plotts (2008)

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outline the research done within the context of the microsystem regarding students' learning being affected by expectancies, curricular choices, teacher attitudes, classroom noise, and crowding. Also, students' interaction shapes the working of the ecosystem. As Sontag (1996) points out, investigations center on (a) developmentally investigative person characteristics, (b) hierarchal environmental systems, micro- and meso- levels, and (c) the time dimension.

In children and adolescents at risk for conduct and aggression problems, Bloomquist and Schnell (2002) identify parent, parent-child, and family risk factors. Parents of these children exhibit higher insularity, depression, substance abuse, and negative cognition. A negative reinforcement pattern has been identified in the parent-child relationship stemming from coercive interactions. Within the family unit, relationship problems with siblings and parental conflicts are associated with behavioral issues in school age children (Jenkins & Smith, as cited in Bloomquist & Schnell, 2002). Other factors in the larger context can contribute to risk factors associated with aggression and conduct problems and includes disadvantaged neighborhoods and community violence (Bloomquist & Schnell). In a review of school related factors, Walker, Colvin and Ramsey (1995) discussed (a) the schools' lack of proactive programs, (b) punishment –exclusion methods of discipline, which Jackson and Veeneman-Panyan (2002) describe as procedural approaches, (c) labeling for eligibility which the authors interpret as alienating, and (d) lack of parent participation due to the schools focus on the negative behavior creating a sense of blame and defensiveness.

In regard to labeling, Germaine (1991) alluded to the hazards in relation to being labeled learning disabled which could result in a view of the child's learning style as a problem which could lead to less interaction with the teacher, peer rejection, learned helplessness, lower teacher

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expectations, and lower self-expectancy. In a study by Bianco (2005), teachers provided

scenarios of students made fewer referrals to a gifted program when student was labeled as

learning disabled or emotionally or behaviorally disturbed. Along the same line, Tournaki (2003)

used scenarios to study teachers' ratings of academic success after manipulating gender, reading

achievement, social behavior, and attentiveness variables. Tournaki concluded teachers used

irrelevant information to make their predictions. In particular, reading difficulties was not rated

as an impact to success unless accompanied by a label. The implication this has on the inclusion

of students with disabilities was discussed. Examining placement of students with learning

disabilities in relation to their emotional functioning, Howard and Tryon (2002) explored the

ratings of depression by students and counselors. The authors concluded the self-ratings of

students did not differ by placement however; the counselors rated the students labeled with

learning disabilities in the regular classroom as more depressed.

The ecological perspective examines the risks and supports to the individual in light of

the contexts or environmental interactions and can be used in the research and support of

students with disabilities (Germaine, 1991; Sontag, 1996; Weber & Plotts, 2008).

Risk & Resiliency Framework

Disabilities can be viewed as a chronic condition and affect the individual over their life-

span and are associated with various risk factors (Cavanaugh & Blanchard-Fields, 2002). A

learning disability or related learning problem [ADHD, NLD] pose a life span issue in which

there are specific outcomes (Werner, 1993; Kavale & Forness, 1995; Barkley, 1997; Weyandt,

2001). Spekman, Goldberg, and Herman (1993) state "the constructs of risk and resiliency...are

highly relevant for the field of learning disabilities (LD's). Individuals with learning disabilities

are at risk for a variety of negative outcomes throughout their lives" (p. 11). Learning disability is a complex phenomenon and as a field has used theories that have only represented learning disabilities in a "loosely organized picture" (Kavale & Forness, 1995, p. 247). In apparent agreement, Spekman, Goldberg, and Herman, (1993) stated in earlier research,

> until research consistently considers the context or ecology in which LD individuals
> develop as well as patterns of individual strengths and weaknesses, the complexity of the
> forces influencing ongoing LD impact on the individual's life and adjustment cannot be
> understood. (p. 11).

Werner (1993) describes the risk-resilience framework as being derived from the earlier work of Horwitz, a developmental psychologist, applying a model used to view the "risk and resilience of an organism to bacterial infection" (p. 28) in research of children's biological and social risk factors. Spekman, Herman, and Vogel (1993) define risk factors as "hazards, adverse circumstances, or negative events that increase the likelihood of a negative outcome" (p. 59). Protective factors on the other hand increase the likelihood of positive outcomes (Spekman, Herman, & Vogel, 1993). These protective factors supply the resilience that Werner (1993) defines as "... even under adverse circumstances, the constitutional resources of the individual are such that the rate and quality of development in a particular (behavioral) domain will not be seriously affected" (p. 28).

Risk Factors

It may be possible to characterize these risk factors as personal and extra-personal.

Personal Factors. Academic problems, social problems, life-span impacts, elevated high school drop out rate, under employment, self-esteem issues, dependence on others, emotional

difficulties, an external locus of control, poor school attendance, and dissatisfaction with their lives (Levin, 1992; Spekman, Goldberg, & Herman, 1993; Werner, 1993; Westman, 1990) are among the risk factors of LD that could be considered personal.

Extra-personal Factors. Perinatal stress, lower educational levels of the mother, lower socioeconomic status, and parental alcoholism and mental illness (Werner, 1993; Vogel, Hruby, & Adelman, 1993) are identified as risk factors in learning disabilities.

Resiliency Factors

A prospective longitudinal study by Werner (1993) of students with learning disabilities born in 1955 was conducted on the island of Kauai. Werner (1993) identified five protective clusters based on her interviews with students who at age 32 had made successful life transitions. Accordingly, they are (a) cluster one appears as a temperament factor. The temperament of the individual as an infant and child yielded positive reactions from caregivers, teachers, peers, and spouses; (b) cluster 2 is values and skills. Students had realistic goals and expectations and plans. They had a positive outlook that problems could be overcome. And, they had chores and domestic responsibilities; (c) cluster three reflected the caregiver characteristics. These were parents who were supportive, provided structure and emotional support in the home, and had good parenting skills which fostered self-esteem. Also, a mother with an educational level beyond high school; (d) cluster four appeared as a supportive adult factor. This includes supportive adults like grandparents, youth leaders, or members of church groups. These supportive adults acted as "gatekeepers for the future" (Werner, 1993, p. 32); (e) lastly, cluster five is identified with opportunities at major life transitions. Werner (1993) went on to explain

among the life events that were considered critical turning points for these men and

women were (a) joining the work force and establishing themselves in a career or job, (b)

seeking additional education in a (community) college, (c) joining the Armed Forces to

gain educational and vocational skills, and (d) becoming an active member of a church or

religious community. (p.32)

Wong (2003) in her review cited physical attractiveness, athleticism, supportive teachers, and

having more mutual and quality friendships in addition to Werner's (1993) resiliency factors.

Implications

Werner (1989) defined an intervention as "an attempt to shift the balance from

vulnerability to resilience, by either decreasing exposure to stress related health risks or life

events... or by increasing the number of protective factors" (p.81).

A recent study examining a risk-resiliency framework in psychosocial adjustment and

learning impairments (Sorensen, Forbes, Bernstein, Weiler, Mitchell, and Waber, 2003)

identified (a) effectiveness of the clinical assessment, (b) support for academic success, (c)

child's attitude toward school, (d) stressful family events and (e) the perspectives of the parents,

teachers, and child toward psychosocial adjustment as contextual elements. The authors

acknowledge that learning impairments may have a neuro-developmental basis and create a life

long risk. However, the authors suggested interventions to improving academic skills but felt it

should not be limited to only that area.

Werner (1993) suggested we provide a continuum of services that (a) reduces the

negative outcomes associated with learning disabilities, (b) promotes self-esteem and

self-efficacy, (c) offer opportunities not only in the school years but also "second chances" (p. 33) later in life. Further recognition of formal and informal support systems that exist in the lives of children with learning disabilities can "be utilized to enlarge their repertoire of problem-solving skills and enhance self-esteem" (p.34) and ties to other adults need to be encouraged and strengthened.

Wong (2003) posits aiding the student in self-understanding which includes the self-acceptance of their learning disability and realistic goal setting. Further she adds the addition of parental interventions.

In an investigation of factors involved in the success in college of students with learning disabilities, Vogel, Hruby, and Adelman (1993) suggested that students in child development courses in high school and college be taught how to develop strong oral language in their own children. Teachers should develop a variety of experiences in and out of the school and teachers and parents allow for tutorial relationships to be developed. Teachers should develop curriculum to aid the student in developing goals and "develop a series discrete steps for achieving them" (p. 42). In addition teachers should improve skills in oral language, pragmatics, advocacy, and maintaining informal conversations. Counselors can help in identifying and clarifying career goals as well as being more active in helping students develop problem solving strategies "appropriate to family, social, and employment settings" (p. 42).

A recent study by Murray and Greenberg (2006) focused on the social relationships and social contexts of children classified in high incidence disability groups. The author's findings suggested that it is important to consider the social relationships and social contexts of children. In particular, "efforts that target a number of relationships and contexts concurrently (i.e. family,

school, peers) may be of particular importance because it appears that different relational and contextual experiences contribute to different aspects of children's adjustment" (p. 229). In the same vein, social support was found to mitigate the impact of low socioeconomic status on academic achievement (Malecki & Demaray, 2006).

According to Bryan (2003), "the major challenge is to convince school communities of the importance of school environments that are benevolent and supportive, and developmentally appropriate" (p. 97). Resiliency needs to be a component at any level in the educational endeavor with students with disabilities across the life span. In a review of the book *Resiliency: What We Have Learned* by Bonnie Benard, Ryan & Hoover (2005), the reviewers, identify the author's four patterns of strength: (a) social competence, (b) problem solving, (c) autonomy, and (d) a sense of purpose which needs to "occur in the context of family, school, and community" (p.117).

Methodological Approach

Multidimensional Scaling

Multidimensional scaling (MDS) technique in data analysis has been used in psychological, social, and educational research (Davison, 1983; Kruskal, & Wish, 1978; Romney, Shepard, & Nerlove, 1972; Shepard, Romney, & Nerlove, 1972) to investigate psychological constructs of personality and attitude as well sociopolitical and economic areas (Jones, & Koehly, 1993; Summers, 1970).

When the goal of the research is to examine underlying structures of concepts, traits, persons, or cultures, multivariate techniques in the form of cluster analysis, factor analysis, and multidimensional scaling provides procedures for analyzing the data (Davison, 1983; Field,

2005; Jones, & Koehly, 1993; Klienbaum, Kupper, & Muller, 1988; Kruskal, & Wish, 1978; Shepard, Romney, & Nerlove, 1972).

MDS is a technique for studying the structure of a phenomenon based on measures of proximity or distance based on similarity or dissimilarity between pairs of stimuli (Davison, 1983; Jones, & Koehly, 1993; Kruskal, & Wish, 1978). Jones and Koehly (1993) emphasize the MDS technique can "(a) reveal structure..., (b) isolate and identify individual differences in perception, cognition, and preferences..., and (c) measure perceived changes..." (p. 95). The results of the analysis are presented in a graphical representation of the data along sets of coordinate axis as well as values matrices (Kruskal, & Wish, 1978; Davison, 1983; Jones, & Koehly, 1993). Ross (1970) presents a good summary of the methodology. "The aim of the method is to construct maps of the psychological structures from data on psychological distances much as the cartographer constructs maps of terrain from distances between fixed points on the terrain" (p.279). The analysis of data to provide insight into structure is important to a variety of research endeavors in the social sciences (Davison, 1983; Field, 2005; Jones, & Koehly, 1993, Kruskal, & Wish, 1978).

MDS Application

A study by Basen-Engquist and Edmundson (1996) examined health risks of high school students. Both MDS and cluster analysis were performed, illustrating the complimentary use of the procedure. A four dimensional solution was presented as was a five cluster solution in the cluster analysis. Important to this discussion are the authors conclusion the MDS provides more information and detail in the development of effective interventions.

In another recent study, McCaughey and Strohmer (2005) explored the construct of prototypes in relation to disability groups. A prototype "is an ongoing, cognitive representation of common attributes and distinct characteristics that define an object or person" (p. 89, abstract). In examining the procedure, the authors used a card sort method in which participant sorted cards in disability groups based on the perception of the attributes. A qualitative approach was used for the analysis and the analysis presented. The similarity to MDS approaches is apparent (see, Davison, 1983; Kruskal, & Wish, 1978; Romney, Shepard, & Nerlove, 1972; Shepard, Romney, & Nerlove, 1972). In their recommendations for future study, the authors suggested MDS and cluster analysis techniques. Exploring issues in the area of bulimia, Viken, Treat, Nosofsky, McFall, and Palmeri (2002) used MDS to map prototypes related to body size and facial affect in women with high and low bulimic symptoms. The results showed the high symptom women used more information about body size and less about affect.

Garcia, Jimenez, and Hess (2006) investigated math word problem difficulties in students with arithmetic learning disabilities and typically achieving students based on projected facets. The results provided an interpretable three dimensional spatial solution which providing insight into the difficulty of arithmetic word problems especially where missing terms were in the first position. In an effort to examine goals in relation to students' concept of personal best (Martin, 2006), a multidimensional analysis provided results showing student persistence, class participation, educational aspirations, and enjoyment of school fell along two dimensions of (a) clear goal focus and (b) self improvement focus.

Summary

Research is a primary concern in the social science arena. A rich array of methodology exists for the study of human behavior. Analysis techniques provide a basis for synthesizing the data for interpretation. Multidimensional scaling is one such technique for exploring the constructs related to many areas in psychology and education in particular. Students with special needs present many risks especially academic (Lerner, 2003) and among the resilience factors for these students is the support of the adults in their environment (Werner, 1993). Students come in direct contact with their teachers on a daily basis.

This chapter presented an examination of the foundational of special education and two relevant theories and a risk-resiliency framework that can be used as the foundation to guide research efforts and provide insight into the interventions to be used with special needs students. Further, a methodological approach to examining psychological constructs was presented.

CHAPTER 3: METHODOLOGY

Purpose

The multifaceted nature of exploring teacher perceptions of students with disabilities where interaction is reciprocal requires drawing from a social cognitive perspective (Bandura, 1977; Zebrowitz, 1990; Moskowitz, 2005) mindful of the ecological implications (Bronfenbrenner, 1979) in risk-resiliency framework (Wong, 2003).

The purpose of the study is to examine the prototypical thinking of teachers regarding students labeled with a disability based on their perceptions of academic risk and resiliency elicited by the categorical label assigned.

Further, this chapter presents the study design, participants, sampling, procedures, and expected findings.

Design

Type. Two basic designs are proposed. First, for the purpose of exploring the teachers' perceptions of special needs students based on a categorical label used as a stimulus, a quantitative descriptive design quantifying and displaying the differences in perception based on multidimensional scaling (Jones & Koehly, 1993) will be used. Secondly, differences between teacher groups (regular and special education) in a causal-comparative design (Gay & Airasian, 2000) allows for the exploration of differences between the groups on the perceived variables of overall risk and resiliency based on the disability label.

Variables. The study involves the perception of academic risk and academic resiliency of students with disability labels based on the perception of teachers when evaluating the assigned categorical label (i.e. LD v. Deaf) which is considered the stimulus. The stimulus variables based

on IDEA categories (Lerner, 2003) are learning disability, mental retardation, emotional disturbance, multiple disabilities, hearing impairment, orthopedic impairment, visual impairment, autism, deaf-blind, and two non-IDEA categories seen in the classroom, gifted, and bi-lingual. The overall risk and resiliency posed by a given categorical label is operationalized by assigning a rank on a scale of 1 to 7 with 1 being low risk or resiliency and 7 being high risk or resiliency, while similarity judgments between labels on academic risk or resiliency will be made on a scale of 1 to 7, with 1 being less similar to 7 more similar.

Participants

The participants in this study were 18 teachers in a graduate program in education and 18 teachers in a graduate program in special education. The racial and ethnic make-up of the participants is diverse but primarily Caucasian and African-American from the southern Chicago metropolitan area. The teachers work in a variety of school setting including urban-suburban, public-private, and primary–high school.

Sampling

Because of the nature of the study requires teachers, a purposeful sampling approach will be used (Gay & Airasian, 1996). Teachers from a large state university's graduate program in education and special education will be asked to participate. The teachers will be volunteers drawn from the Teacher as Researcher and Methods in Special Education classes.

Inclusionary Criteria. Because exposure to students and their abilities is important in making judgments, teachers were required to have at least one full year of teaching experience and be certificated in the State of Illinois.

Exclusionary Criteria. Teachers with less than one full year teaching experience, probationary teachers, paraprofessional experience, or lack certification in the State of Illinois were excluded from the study.

Limitation. The ability to generalize the results based on a limited sample of college graduate students is recognized. However, McCaughey and Strohmer (2005) argue that much research into attitudes has been conducted on college students and in particular research toward individuals with disabilities and that these individuals become the next generation of professionals interacting in and influencing their environment. In the case of this sample the inclusionary criteria ensures a level of teaching expertise or background based on certification and experience with students and the attitudes exhibited in terms of the prototypes elicited by the classification label may well extend to those with similar training outside this particular university.

Instrumentation

When studying perceptions and attitudes a variety of multivariable data analysis techniques or methods have been available and used in research. However, these have been limited when exploring the perception of stimuli and their relationships (Jones & Koehly, 1993) while the use of multidimensional scaling techniques can be useful. Dunn-Rankin, Knezek, Wallace, and Zhang (2004) suggest in their outline for attitudinal measurement the (a) focus, (b) psychological objects, and (c) the task be considered. Although a task may include judgments, choices, or both, they state "generally, however, judgments of similarity between the psychological objects are obtained initially" (p.9).

Development. A questionnaire was developed to elicit teachers' perceptions as to risk and resiliency of students with special needs based on the label provided using a judgment of similarity. For example, a student in your classroom with a learning disability compared to a student with a speech and language disorder is at less risk (1) to greater risk (7). Appendix D provides the full questionnaire booklet. The questionnaire booklet is composed of four parts. Part I contains the statements for judgment as to similarity in risk. Part II contains the statements for judgment as to resiliency. Part III contains the statements for judgment as to overall risk and resiliency of a given category (stimulus, i.e. hearing impairment). And Part IV is comprised of basic demographic questions. In Parts I and II, the similarity judgments are presented in all the possible ways of rating or [k(k-1)/2]. In the development of the questionnaire, there are 12 stimuli or categorical labels. These yield [12(12-1)/2] or 66 possible pairings for the participants to rate the similarities (S_{ij}) of each pair. Davison (1983) points out that time and space effects can affect the responses elicited from a questionnaire based on pairs of stimuli. However, it is assumed with the homogeneity of the group (teachers) will minimize these effects and a rotating standard method will be employed (Davison, 1983) which provides some expediency in performing the rating task. This approach simplifies the judgments in by allowing for the stimuli to be divided into sections of *I*-1 or 12-1 yielding 11 sections. By way of example, this means the LD would be compared to the 11 remaining category labels then the next category speech and language impaired would be compared to the 10 remaining categories and so on. A complete version of this can be examined in appendix D.

Validity. Gay and Airasian (1996) point out several factors that can affect validity, including: (a) unclear directions, (b) confusing and ambiguous test items, and (c) using

vocabulary too difficult for test takers. In an effort to establish the content validity, the common classification labels used in special education (Lerner, 2003) are utilized. The questionnaire booklet and instructions were presented to a committee comprised of 5 graduate students from special education and 5 from regular education who will form the basis of the participants in the field test and provide constructive feedback on the clarity of the instrument and instructions as well as be considered an "expert panel" (Gay & Airasian, 1996, p. 168) in the establishment of the validity of the instrument. Further, the instrument is developed based on models previously discussed in the literature (Kruskal & Wish, 1978; Davison, 1983; Jones & Koehly, 1993; Dunn-Rankin, Knezek, Wallace, & Zhang, 2004).

Procedures

Institutional Review Board approval from the host university and Capella University was obtained. The primary investigator (PI) provided the basic research information to selected classes from the *Teacher as Researcher* classes and the *Methods in Special Education* class. Volunteers meeting the criteria were provided an informed consent document. The volunteer participants were given the instruction in the classroom after the professor left. The basic research information was reiterated, stimulus words presented and clarifications and questions were addressed by the PI (See Davison, 1983). Instructions were given and two sample items illustrating the type of response (similarity judgment) were attempted. Questionnaire booklets were distributed and the four sections reviewed. Participants returned the questionnaires upon completion to the PI.

Data Collection & Analysis

The questionnaires did not contain any identifying information, thereby protecting the anonymity of the participant. The questionnaires were reviewed for completion. Spoiled questionnaires, those with incomplete information, will be counted but not used in the data analysis. Standard descriptive statistics were performed using SPSS on the demographic information in section four of the questionnaire. Along with the demographic information, the similarity data from sections one and two were entered into SPSS for analysis. An average similarity score will be computed for each stimulus pair and a correlational matrix will be computed (Davison, 1983; Dunn-Rankin, Knezek, Wallace, & Zhang, 2004) and used as the input for the multidimensional scaling analysis. Further, section three will provide data on the judgments of the participants toward the overall risk and resiliency for a given disability based on the label (stimulus). A 2 X 12 repeated measure ANOVA design will be utilized to examine the differences between categories (12) and teacher type (2, regular or special education). Standard statistical procedures were utilized and post hoc analyses performed.

Expected Findings

MDS Analysis. It was expected that prototypes will form along two dimensions, the physical-cognitive nature of the disability and the communication ability along another axis (2nd dimension). Although the two dimensional expectations are arrived at rationally based on the experience of the researcher, there is some indication that the reliance on a medical model in the identification and support for students with disabilities emphasizes student centered characteristics (Bryan, 2003; Kavale & Forness, 1995) and social identity of stigmatized

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individuals lay along dimensions of (a) mental-physical, (b) visible-not visible, and (c) preventable-not preventable (see Deaux, Reid, Mizrahi, & Ethier, 1995).

    Difference. Differences between the types of teachers will be significant in the area of high incidence on the resiliency of the student but not risk for high incidence categories (LD, CD, & ED, Speech & Language Impaired) while there will be little difference between the teachers for low incidence categories on both risk and resiliency.

CHAPTER 4: RESULTS

The purpose of this chapter is to present the results of the data analysis with a focus on the questions posed by the investigation. Generally, the investigation explored (a) the differences between regular education teachers' (RE) and special education teachers' (SE) perceptions of risk and resiliency of students with special needs based on the classification label using a rating scale in section 3 of the survey instrument and (b) a quantitative topographical view of the participants' (see Davison, 1983 and Kruskal & Wish, 1978) prototypical thinking regarding the risk and resilience posed by the categorical labels utilized in education for students with special classifications. Results are presented in narrative, tabular, and graphical format.

Demographics

The participants in the study were recruited from the graduate programs in education and special education at Governors State University in Illinois. The sample was purposeful (Gay & Airasian, 1998) with the need for experienced teachers. All participants met the inclusionary criteria of the study. Ten participants were excluded based on the exclusionary criteria of less than one year of teaching or not having a valid Illinois teaching certificate at the time. Although no data were collected from these individuals, most were returning to pursue a graduate degree in education or were teachers who had not yet taken a foundational class in the characteristics of students with exceptionalities. Of the forty-eight volunteers, 10 were excluded, there was one participant, a regular education teacher who did not wish to complete the survey after beginning and exercised her right to discontinue her participation, and one spoiled survey discovered in the data processing phase of the study.

Table 2
Demographic Variables by Assignment

Variable	Regular Education (N=18)	Special Education (N=18)
Gender		
Male	1	3
Female	17	15
Education		
BA	15	7
MA	3	11
Teaching Level		
Primary	7	4
Intermediate	5	4
Jr. H.S.	3	5
High School	3	5

The resulting sample was 36 participants with 18 participants classified as special educations teachers (50%) and 18 participants classified as regular education teachers (50%) based on the response to their current assignment in the demographic section of the survey instrument (section 4).

A visual inspection of the data presented in Table 2 shows the higher number of female participants (88%) which is generally reflective of education programs. It is also reflected in the groups. It should be noted the educational levels of the special education teachers was higher with 61% having a masters degree while 37% of the regular education participants reported having this level of education. This resulted in a significant difference in this area [$\chi^2 (1) = 7.48$, $p= .00624$]

In reviewing the data in Table 3, it becomes apparent the special education teachers have more experience teaching and as would be expected more experience with special needs students. These two area were significantly different with $p=0.05$ and $p=0.04$ respectively on an

independent *t*-test with 34 degrees of freedom. Their experience is reflective of the higher

education levels. It is interesting to note the experience regular education teachers

Table 3

Mean Values of Select Variables by Assignment

Variable	Regular Education (N=18)		Special Education (N=18)	
	M	SD	M	SD
Teaching Experience	3.91	3.81	8.47	8.70
Special Education Classes	3.78	3.40	12.89	6.29
Teaching Experience with Special Needs Students (yrs)	2.47	3.30	6.36	6.85

have with special needs students and the number of special education classes reported. As an

example, the State of Illinois only requires one foundational class in special education with

diversity issues including special needs to be infused in the other curricular areas. This increase

in classes and experience may be a result of the legislative initiatives taking place (see Yell,

2006).

Risk-Resiliency Analysis

This section presents the data examining the comparative ratings of the two groups RE

and SE in the area risk and resiliency and the topographical representation of the groups toward

the labels (categories) used in education in an effort to describe the prototypical thinking of the

teachers in this regard. It is based on the analysis of data gathered in sections 1, 2, and 3 of the

survey instrument (see Appendix D).

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Comparative Analysis

In an effort to examine the differences between regular education teachers' and special educations teachers' perceptions of the risk posed by a disability and the resiliency of the individual so labeled, a repeated measures ANOVA utilizing a 2 X 12 design was performed. There were two levels of assignment (RE and SE) and 12 dependent measures of (label categories) ratings across two specific and separate ratings scales, (a) risk, and (b) resiliency. On the two measures the participants rated the category label (e.g. LD) as to the risk posed to the individual with this label and to the resiliency of the individual with this label. The repeated measures ANOVA examines with-in and between subjects differences (Field, 2005; Green, Salkind, & Akey, 2000; Huck, 2008). The between subjects difference was the interest of this study.

As suggested by Field (2005) and Green, Salkind, and Akey (2000) the results of the multivariate analysis was used to avoid sphericity issues. For both scales, risk and resiliency, there were no significant differences between the ratings of the regular education teachers or the special education teachers (risk: Λ=.51, F (11, 24) =2.11, p= .062; resiliency: Λ=.58, F (11, 24) =1.60, p= .16). A post-hoc power analysis was .77 and .63 respectively. Although not indicated in this data differences may exist but would require more power through a larger sample. However, the differences between the regular and special education teachers can be visually presented.

Dimensional Analysis

Jones and Koehly (1993) describe the over use of "univariate analysis of variance" (p. 95) and suggest other approaches be explored when the examination of a subjects' perception to

a stimulus or relationship is being explored. Davison (1983) and Romney, Shepard, and Nerlove

(1972a, 1972b) describe this approach utilizing multidimensional scaling techniques (MDS).

   Unidimensional Scaling: Risk-Resiliency Comparison. The statistical analyses of the risk

and resiliency ratings of the teacher groups (RE and SE) were not significant. However,

topographical or descriptive differences can be seen when plotting the ratings unidimensional

(see Dunn-Rankin, Knezek, Wallace, & Zhang, 2004). Pre-analysis of the data provided a mean

rating for each category by assignment and percent rankings were computed allowing the

rankings of the groups to be compared (see Figure 1 and 2)
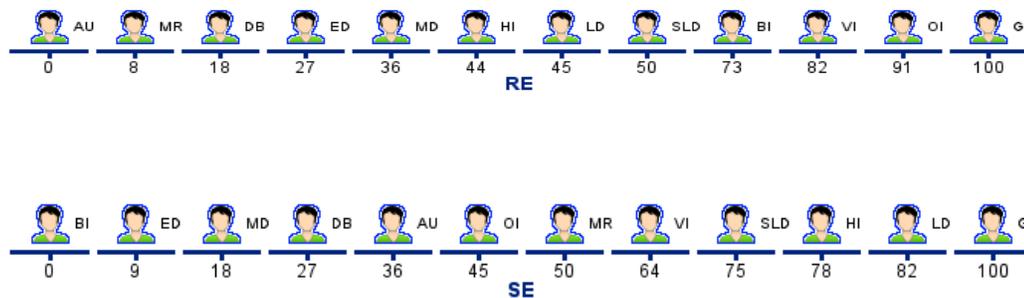
Figure 1. A unidimensional scale comparison of the regular education and special educations
rankings of the resiliency based on the categorical label. The scale is from low to high ranking.
Autism (AU), Mental retardation (MR), Deaf-Blind (DB), Emotional Disability (DB), Hearing
Impaired (HI), Learning Disability (LD), Speech-Language Disorder (SLD), Bilingual (BI),
Visually Impaired (VI), Orthopedically Impaired (OI), Gifted (GI).

   In examining Figure 1, it becomes apparent that the teachers agree on the resiliency of the

individual labeled gifted (GI), ranking that category the highest, while surprisingly we see a

difference at the lower end of the scale being anchored by autism in the view of the regular

teacher while bilingual is in this position in the view of the special education teacher. Also, if we

examine the dimensions, using the 44/45 percent ranking and above, the special educator has OI,

MR, VI, SLD, HI, LD, and GI respectively, while the regular teacher has HI, LD,SLD,BI, VI,

OI, and GI respectively. More subtly there is 86% agreement in the rankings in the top half only differing on BI and MR. It appears the RE teacher's perception is based on adaptive ability to the regular (inclusive) classroom or possibly a view on who should be mainstreamed or included while the SE appears to have an overall adaptive ability to academic work or who needs more support systems.
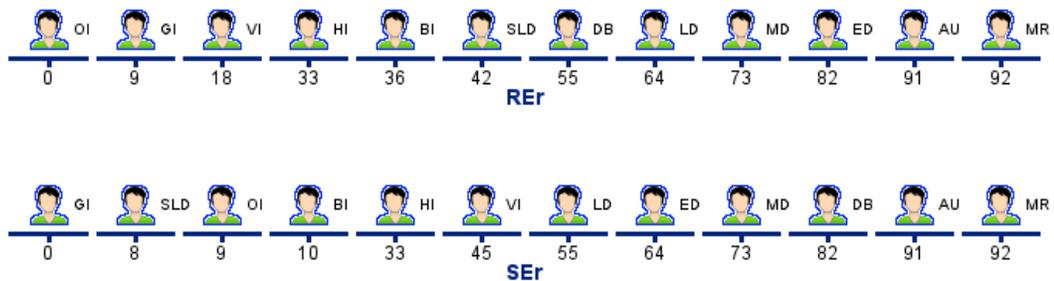
Figure 2. A unidimensional scale comparison of the regular education and special educations rankings of the risk based on the categorical label. The scale is from low to high ranking. Autism (AU), Mental retardation (MR), Deaf-Blind (DB), Emotional Disability (DB), Hearing Impaired (HI), Learning Disability (LD), Speech-Language Disorder (SLD), Bilingual (BI), Visually Impaired (VI), Orthopedically Impaired (OI), Gifted (GI).

Risk is examined in Figure 2. Comparatively, the upper extremes showing greater risk are similar being anchored by mental retardation (MR) and autism (AU) while the teacher groups show a slight difference in the risk posed at the low end. Apparently the regular teachers ascribe a slight risk to those in the gifted category while special education teachers do not. Less apparent is the consistency of the categories (86%) in the upper half of the scale (42/45>) varying only in the VI and SLD labels with special education teachers ascribing more risk to visually impaired (VI) and the regular education teachers ascribing more risk to speech and language disorders (SLD). Dimensionally, it appears the regular teachers view risk in regard to the impact to the classroom behaviorally and cognitively while the special education group appears to perceive the

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cognitive impact. This is evidenced in the difference in placement of the emotionally disordered (ED) grouping farther left on the scale than the regular teachers place it.

Multidimensional Analysis

The multidimensional analysis (MDS) was based on the responses to the two different survey sections. The first was the comparisons of the categorical labels as stimuli in the risk domain. Using a standard rotating method of presenting the stimuli (see Davison, 1983) the teachers made comparative judgments as to the risk posed by each disability category in relation to other categories (e.g. LD compared to HI) as to the similarity of risk. The scale was from 1 less similar to 7 more similar. This rating was performed for each domain, risk (section 1) and resiliency (section 2), on the survey instrument. Pre-analysis of the data provided a mean rating for each category to allow a dissimilarity matrix to be derived using the scaling (multidimensional scaling) analysis program in SPSS v. 15. The SPSS software uses an ALSCAL approach (see Davison 1983, Kruskal & Wish, 1978, SPSS help). The program was set to use Euclidean distances at an interval level and was restricted to two dimensions.

Risk. The two groups of teachers (RE and SE) rated the categorical stimuli labels in the area of risk. Generally, the participants were asked to rate the categories against each other on the basis of the risk posed to the individual with the label in the academic setting.

The analysis resulted in two, 2 dimensional solutions, one for each assignment group (RE or SE). The matrix for the regular education group showed 82% of the variance accounted for between the disparities and the distances ($R^2 = .82$) while the special education teachers had an 86% variance ($R^2 = .86$). These demonstrate a good fit for the data. The fit is graphically

represented for the groups in figure 3 and 5. The better the data fits the model, the less scatter

there will be (Davison 1983, Kruskal & Wish, 1978).
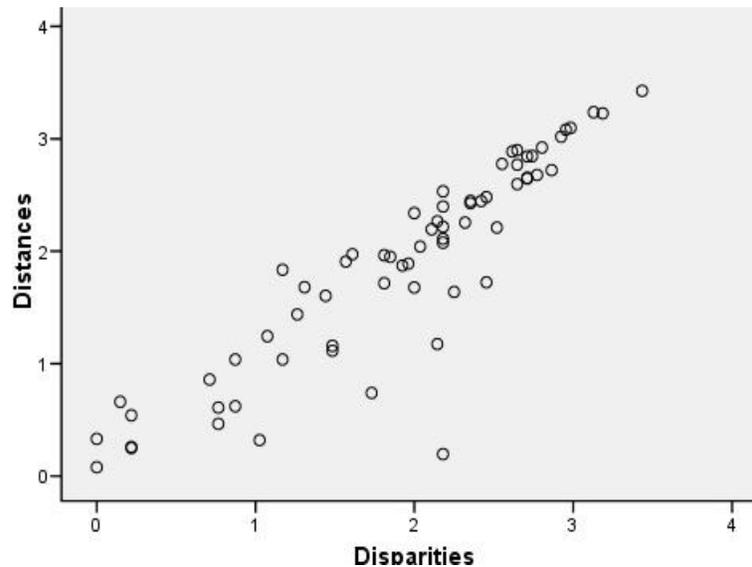
Figure 3. Scatter plot of linear fit of regular education teachers based on the ALSCAL analysis
of risk data. $R^2 = .82$

        The dimensional plots are presented in figures 4 and 6. Kruskal and Wish (1978) discuss

the procedure for interpretation of the plots can be done several ways. These include the

examination of neighborhoods or groupings and dimensions based on the dimensional axes.

Overall, Kruskal and Wish promote an eclectic approach that begins with the examination of

neighborhoods and then to the dimensionality. Davison (1983) refines this further in stating

"interpreting a solution involves identifying the important groupings and ordering of the stimuli.

For groupings, one must identify the features that each member of the grouping shares in

common. For orderings, one must identify the attribute…by simple inspection of the

configuration (p. 71). Interpretation of the MDS results follows this general guidance but is also

guided by (a) the researcher's knowledge of the characteristics of the disabilities represented by the label, and (b) the previous research showing the reliance on the medical model (Bryan, 2003; Kavale & Forness, 1995) which emphasizes student centered characteristics in the identification and understanding of the impact of the disability, social identity of stigmatized individuals lay along dimensions of (a) mental-physical, (b) visible-not visible, and (c) preventable-not preventable (see Deaux, Reid, Mizrahi, & Ethier, 1995), and lastly, McCaughey and Stromer's (2005) examination of prototypes in disabilities which identified physical and adaptive characteristic prototypes.

Regarding risk (Figure 4), the regular education teachers' derived stimulus configuration shows some distinct neighborhoods. First the grouping on the right (MR, AU, MD, LD, ED), appears to reflect a cognitive-adaptive impact of the perceived disability while the separation of the ED group acknowledges a behavioral-adaptive perception. The grouping in the upper left (VI, DB, HI, SLD) appears to be reflective of a physical component of the disability while the lower left quadrant appears to acknowledge good academic adaptive ability regardless of physical or language factors (OI, BI) are grouped with Gifted (GI).
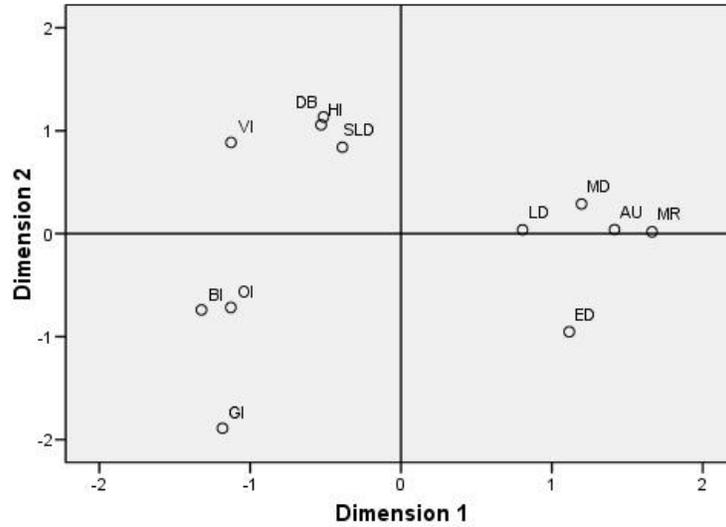
Figure 4. Derived stimulus configuration for regular education risk data. Autism (AU), Mental retardation (MR), Deaf-Blind (DB), Emotional Disability (DB), Hearing Impaired (HI), Learning Disability (LD), Speech-Language Disorder (SLD), Bilingual (BI), Visually Impaired (VI), Orthopedically Impaired (OI), Gifted (GI).
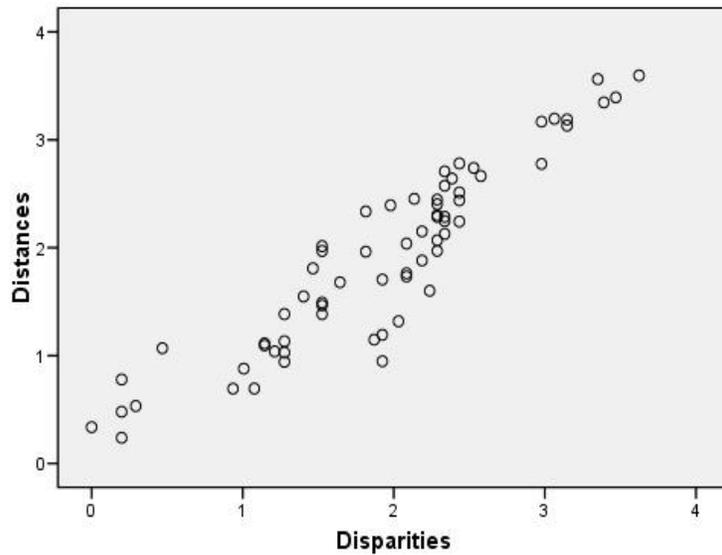
Figure 5. Scatter plot of linear fit of special education teachers based on the ALSCAL analysis of risk data. $R^2 = .86$

Table 4

Stimulus Coordinates for Regular Education Risk Ratings

Stimulus Label		Dimension 1	Dimension 2
1	LD	.8053	.0374
2	SLD	-.3887	.8396
3	MR	1.6635	.0178
4	ED	1.1145	-.9527
5	MD	1.1960	.2885
6	HI	-.5298	1.0571
7	OI	-1.1283	-.7172
8	VI	-1.1268	.8860
9	AU	1.4147	.0397
10	DB	-.5142	1.1338
11	GI	-1.1834	-1.8900
12	BI	-1.3229	-.7401

Note: Stress = .18624 R^2 = .81538
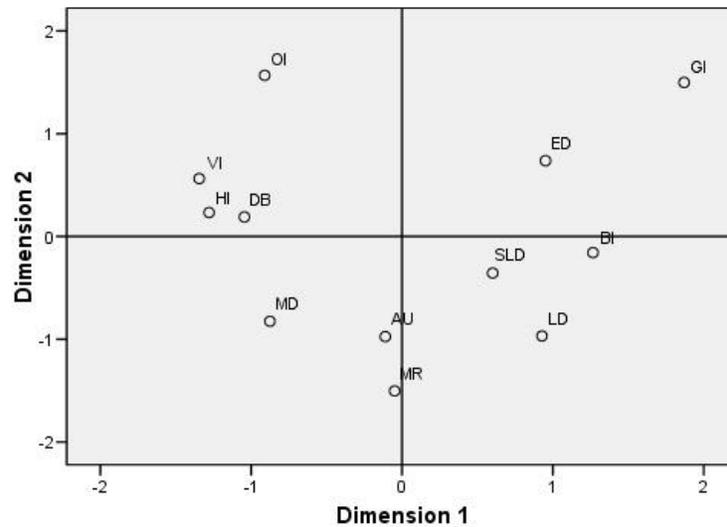
Figure 6. Derived stimulus configuration for special education risk data. Autism (AU), Mental retardation (MR), Deaf-Blind (DB), Emotional Disability (DB), Hearing Impaired (HI), Learning Disability (LD), Speech-Language Disorder (SLD), Bilingual (BI), Visually Impaired (VI), Orthopedically Impaired (OI), Gifted (GI).

Table 5

Special Education Teacher Risk Rating Stimulus Coordinates

Stimulus Label		Dimension 1	Dimension 2
1	LD	.9273	-.9688
2	SLD	.6007	-.3566
3	MR	-.0489	-1.5034
4	ED	.9510	.7367
5	MD	-.8752	-.8258
6	HI	-1.2791	.2325
7	OI	-.9106	1.5673
8	VI	-1.3442	.5630
9	AU	-.1112	-.9745
10	DB	-1.0449	.1888
11	GI	1.8696	1.4982
12	BI	1.2656	-.1575

Note: Stress = .15264 R^2 =.85859

Dimension 1 appears to be a physical-cognitive/adaptive dimension. Dimension 2 maps to a communication-adaption impact which can be seen more easily with the help of the stimulus coordinates loadings in Table 4. HI and DB load high and represent one end of the dimension while GI anchors the other end.

In contrast, the special education teachers derived stimulus configuration for risk (Figure 6 and Table 5) is different in its topography. The left half shows a distinct grouping of the physical disabilities (OI, VI, HI, DB) with the right half having the impairments with cognitive impacts. Illustrated with a distinct neighborhood in the middle (AU, MR) illustrating a cognitive impact, and BI, LD, SLD, and ED clustered in the middle right possibly illustrating a mild cognitive adaptive impact. Dimension 1 for the special education teachers can be thought of as a

physical dimension and dimension 2 is a cognitive dimension (see dimensional loadings in table 5). Generally it a appears the special education teachers' perceptions may be more characteristic based perceptions about the label while regular education teachers' perception is shaped by more qualitative or classroom impact related percepts.

Resiliency. In the area of resiliency, the teachers were asked to rate the stimuli (categorical labels) in relationship to one another on the concept of resiliency. Resiliency was generally explained as to the individual's ability to adapt based on supports. The teachers were asked how similar the disability category was based on the perception of the label. For example, is LD [learning disabled] more (7) or less (1) similar than SLD [speech-language disorder] in terms of being resilient.

The scatter plots of the two groups can be seen in figures 7 and 9. Respectively, the data represents an 88% and 85% fit between the distance and dimensions. This represents a good fit for the models.
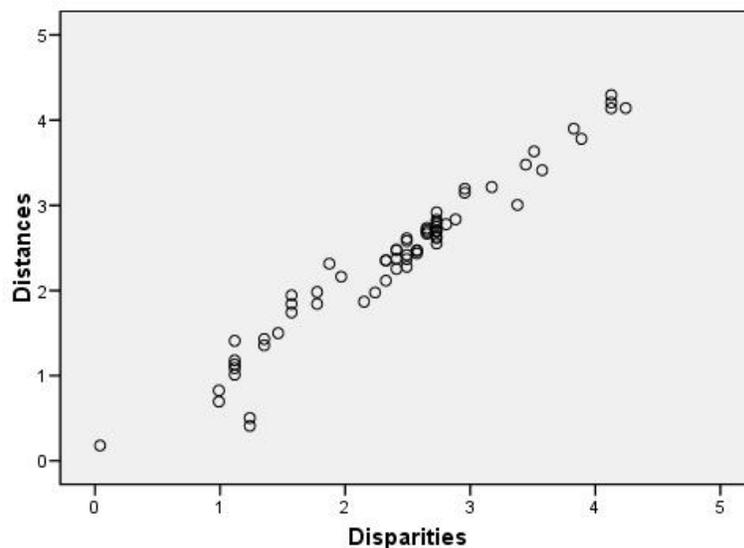
Figure 7. Scatter plot of linear fit of regular education teachers based on the ALSCAL analysis of resiliency data. $R^2 = .88$

Examining the two dimensional solutions for the resiliency data illustrated ,in the derived

stimulus configurations for each group (figures 8 and 10 respectively), differences. For the

regular teachers, there is a distinct neighborhood grouping in the upper 2 quadrants consisting of

MR, AU, and MD which appears to be a cognitive-adaptive grouping. Another distinct group is

in the lower right (SLD, HI, DB, and VI) representing a physical grouping with VI showing

some separation making two distinct sub groups with one group (SLD, HI, DB) having an impact

on communication/language skills. Dimension 1, with the help of the unidimensional scale

presented in figure1, can be thought of as classroom adaptive ability. In other words, those

positioned farther right need more accommodations and modifications. Dimension 2 has a

physical-cognitive pattern.
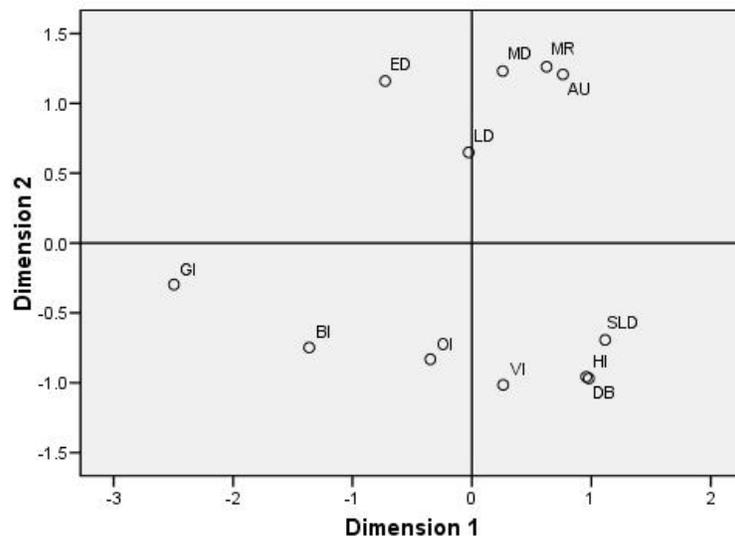
Figure 8. Derived stimulus configuration for regular education resiliency data. Autism (AU), Mental retardation (MR), Deaf-Blind (DB), Emotional Disability (DB), Hearing Impaired (HI), Learning Disability (LD), Speech-Language Disorder (SLD), Bilingual (BI), Visually Impaired (VI), Orthopedically Impaired (OI), Gifted (GI).

Examining the special education teachers' stimulus configuration (figure 10 and Table 5),

topographical differences from the regular education teachers are apparent. Almost all the

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disability categories are from the middle to the right of the plot while the gifted (GI) and

bilingual (BI) labels representing educational categories but not disabilities are in the left aspect

of the plot. Apparently the special education teachers make a distinction on resiliency along a

dimension of disability. Another distinct group is in the middle bottom of the plot and consists of

AU, ED, and MR. With the proximity of the ED in this neighborhood, this grouping takes on a

cognitive-behavioral component or possible an adaptive functioning component. Dimension 1

for special educators is a physical disability dimension. Dimension 2 can be interpreted in the

light of cognitive/behavioral impact. In examining table 4, the high positive stimulus coordinates

on dimension 2 are MR, MD, and AU while the negative pole is dominated by GI and OI,

making it a cognitive dimension.

Table 6
Stimulus Coordinates for Regular Education Resiliency Ratings

Stimulus Label		Dimension 1	Dimension 2
1	LD	-.0276	.6489
2	SLD	1.1157	-.6934
3	MR	.6256	1.2625
4	ED	-.7265	1.1604
5	MD	.2577	1.2314
6	HI	.9579	-.9576
7	OI	-.3480	-.8316
8	VI	.2618	-1.0149
9	AU	.7619	1.2077
10	DB	.9789	-.9689
11	GI	-2.4950	-.2968
12	BI	-1.3624	.7478

Note: Stress = .16467 R^2 = .87584

Euclidean distance model
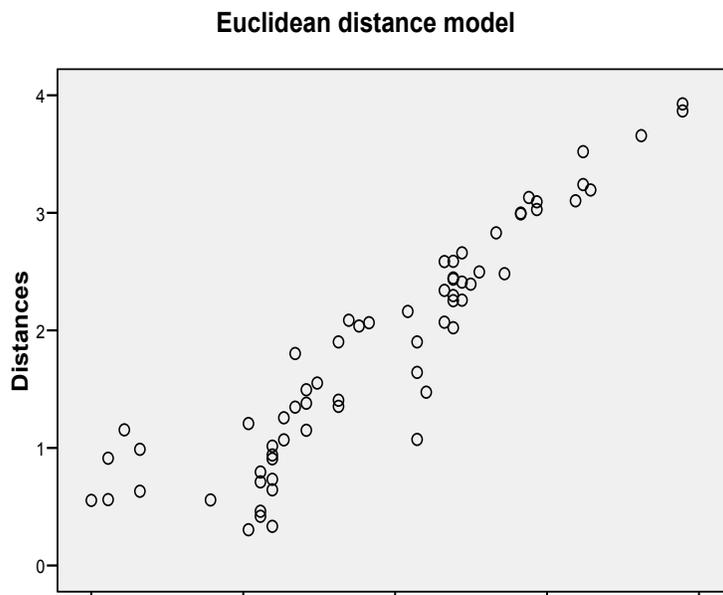
Figure 9. Scatter p   **Derived Stimulus Configuration**   LSCAL analysis
of resiliency data. I

Euclidean distance model
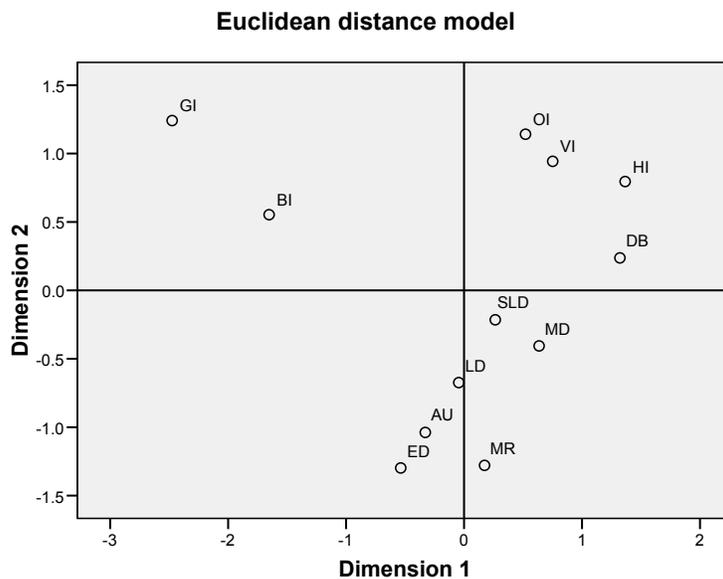
Figure 10. Derived stimulus configuration for special education resiliency data. Autism (AU), Mental retardation (MR), Deaf-Blind (DB), Emotional Disability (DB), Hearing Impaired (HI), Learning Disability (LD), Speech-Language Disorder (SLD), Bilingual (BI), Visually Impaired (VI), Orthopedically Impaired (OI), Gifted (GI)

Table 7

Stimulus Coordinates for Special Education Teachers Resiliency Ratings

Stimulus Label		Dimension 1	Dimension 2
1	LD	-.0448	-.6741
2	SLD	.2645	-.2151
3	MR	.1743	-1.2793
4	ED	-.5368	-1.2982
5	MD	.6367	-.4060
6	HI	1.3659	.7956
7	OI	.5215	1.1415
8	VI	.7520	.9430
9	AU	-.3287	-1.0383
10	DB	1.3220	.2370
11	GI	-2.4743	1.2409
12	BI	-1.6523	.5529

Note: Stress = .17865 R^2 = .85093

Regarding resiliency, the two groups again differ in their view of students' resiliency, based on the categorical labels. Generally, the special education teachers appear to be more characteristically oriented in their views. The regular education teachers appear to view the classroom impact as seen in the adaptive component of Dimension1 (figure 8). Both groups appear to weigh the physical-cognitive aspect of the disability. Table 6 summarizes these results.

Table 8.

Summary of MDS Analysis Results

Area/Analysis Approach	Regular Education (RE)	Special Education (SE)
Risk		
Neighborhood	Cognitive-adaptive	Physical
	Behavioral-adaptive	Cognitive
	Physical	Cognitive adaptive
	Academic ability	
Dimensional	Physical-cognitive (I)	Physical (I)
	Communication adaptation (II)	Cognitive (II)
Resiliency		
Neighborhood	Cognitive-adaptive	Disability
	Physical	Non-disability
	Physical adaptive	Cognitive-behavioral
Dimensional	Classroom Adaptation (I)	Physical (I)
	Physical-Cognitive (II)	Cognitive-Behavioral (II)

Summary

The population was drawn on a group of regular and special education teachers at an Illinois university in the southern suburban area of Chicago. Eighteen graduate students in special education and 18 graduate students in education participated in the study by rating the risk and resiliency of the disability categories based on the labels presented. The repeated measure ANOVA showed no significant difference in the ratings of the categories in the two domains of risk or resiliency. A unidimensional and multidimensional approach was used to examine the topographical aspects of the data to examine the prototypical thinking of the teacher

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groups. Analysis showed the data provided a good fit and that there were distinct patterns or

differences in the perception of the two groups of teachers in the areas of risk and resiliency.

CHAPTER 5: RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

The present study explored prototypical thinking of teachers serving students with special needs. In particular, the labels used to identify students into educational categories were used in relationship to the risk and resiliency attributed to students with those labels. The purpose of this chapter is to discuss the results of the study based on the questions and analyses used to explore the data. Further the chapter puts this information into relief with the theory, concepts and background information presented earlier. The chapter includes a summary of the results, discussion, limitations, recommendations, and overall conclusion.

Results

Wong (2003) suggested in her writing a model or view based on risk-resiliency which should be explored in the field of learning disabilities. Wiener (2003) responded that risk factors extend to other disability types and further suggested that the ecological aspect of education with the child's interactions with the environment including "the impact of teacher beliefs and practices" (p. 78) become part of the focus of future research. This study explores teachers' prototypes based on the labeling used to categorize students. More specifically, (a) how do regular teachers perceive the similarities in academic risk and resilience of students based on categorical labels used to identify students with special needs? ; and (b) is there a difference between regular education teachers and teachers in special education in regard to their evaluation of risk and resilience of students based on their categorical labels? In this regard, the study broadens the area of research into risk-resiliency; provides insight into teacher's perceptions based on the labels; and gives direction for the training of teachers in the risks posed by

particular disabilities but also the resiliency factors including the importance of a supportive

adult in the framework (Byron, 2003).

Research on children with disabilities has been child centered and deficit oriented

regarding the underlying causes, characteristics and risks posed by the disability (Barkley, 1990;

Dunne & Shapiro, 1999; Kavale & Forness, 2000; Lackaye & Margalit, 2006, Lerner, 2003).

Margalit (2003) and Byron (2003) have suggested we move away from a deficit view to a more

empowering viewpoint of risk-resiliency. Bandura (1977) in social learning theory explains

human behavior in relationship to one's interactions with the environment. Werner and Smith's

(1982, 1992, 2001) longitudinal study identified risk factors and resiliency factors. One key

factor uncovered related to self efficacy, an area Bandura (1994) claims "enhances human

accomplishment and well being" (p. 71). Further Bandura provides that conceptually one's self

efficacy can be influenced by (a) experiences, (b) social models, (c) social persuasion, and (d)

physical and emotional states.

In examining the study questions, a quantitative descriptive design based on a multiple

dimensional scaling (MDS) approach provides a topographical examination of the data on risk

and resiliency providing insight into the prototypical thinking of the teachers. The difference

between teacher groups (2) on the labels (12) is based on a causal-comparative design (2 X 12)

using a repeated analysis of variance analysis (ANOVA).

The difference between teachers was found to be non significant ($p \leq .05$) on the repeated

measures ANOVA for both risk and resiliency ratings. Subsequent analysis in a simple

unidimensional scale (Dunn-Rankin, Knezek, Wallace, & Zhang, 2004) showed topographical

differences. In there area of resiliency, the regular education teachers (RE) viewed autism (AU)

and mental retardation (MR) as the least resilient while special education teachers (SE) saw

English Language Learners (BI) and emotionally disturbed (ED) as being the least resilient. On

the other end of the spectrum, both groups listed gifted (GI) as the mot resilient while the RE

group considered those with orthopedic impairments (OI) the next more resilient and the SE

group placed learning disabled (LD) under gifted. Interestingly, the LD category was ranked 45

for the RE group while the SE group ranked OI as 45th.

The results of the multidimensional (MDS) analysis exploring the question of the regular

teachers' perceptions of the similarities in academic risk and resilience of students based on the

categorical labels (stimuli) used in categorizing special needs students provided a topographical

representation of the prototype used by the teacher. The contrast between the regular teacher and

special education teacher showed some similarities and differences along the lines of risk and

resiliency. In the area of risk, the regular education teachers viewed the label in terms of a

physical-cognitive dimension and the communication impact presented (dimension II). The

special education teachers' view was physical along one dimension and cognitive along the

other. This is more disability characteristic specific perception. Both groups however weigh the

cognitive and physical characteristic into their views. Regarding resiliency, the regular teachers

again view along a physical-cognitive dimension and include a classroom or environmental

adaptation view (see dimension I, Table 6). The special education teachers again have a physical

dimension but the other dimension is cognitive-behavioral.

Discussion

In examining the study questions, they were guided by two general expectations. One,

when comparing regular and special education teachers there would be no differences in the risk

rating between the groups especially in the high incidence disability groups (LD, ED. MR[CD], SLD) while the low incidence groups (Lerner, 2003) would be different. In the area of resiliency, there would be no difference between the groups. Second, concerning the prototypical thinking of the teachers in the area of risk and resilience, it was expected to fall along two dimensions. The dimensions were physical-cognitive and communication.

Teacher Comparison. The results in this area are contrary to expectations regarding risk ratings between the two groups of teachers. There were no statistically significant differences in the area of risk regardless of whether the label represented a high or low incidence disability label. However a unidimensional analysis provided some insight into the differences not seen statistically. The regular teachers ascribed more risk to those categories with cognitive impact (MR, AU) or an emotional-behavioral component (ED). The special education teachers assess risk in terms of the cognitive impact (MR, AU) or the multiple impact of a disability in the case of the multiple disability or deaf-blind labels (MD, DB). However, the incidence of the disability (Lerner, 2003) did not appear to be a factor. The area of resiliency was as expected when looking at the statistical data analysis as there was no difference between the teacher groups. This could be attributed to a lack of power in both cases. However, like risk, the unidimensional analysis showed difference in ranking patterns for the labels. The regular teachers' assessment appears based on adaptability to the inclusive classroom while the special education teacher appears to be adaptability based on supports needed to succeed as can be evidenced by the low placement of students with limited English proficiency (BI) rated lowest for resiliency by this group.

MDS Analysis. The more complex ratings or comparisons of the labels for the multidimensional scaling analysis to explore prototypical thinking yielded results that were

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aligned to the expectancies regarding a physical-cognitive dimension for both regular and special education teachers in both the risk and resilience areas. Communication was an area that appeared in the risk area for regular education teachers. Cognitive-behavioral for special education teachers and classroom adaptation were not expected. However, the emphasis on a deficit model (Bryan, 2003; Jackson & Veeneman-Panyan, 2002) would make them in line with training, assessment, and intervention (Kaufman, 2001; Lerner, 2003; Bosworth & Waltz, 2005).

Although the idea of a self-fulfilling prophecy has been argued (see discussion Drew & Hardman, 2007, p.35), Drew and Hardman go on to state "…there is little question that people, such as teachers, form certain expectations of students with intellectual disabilities and that such expectations affect their perceptions and assessment of competency (p. 35)." This has been seen quantitatively in the research of Clark and Artiles (2000) when exploring in a cross-national sample of teachers, a difference in teacher attributes regarding effort and ability of students with a learning disability and those who were normally developing. Qualitative exploration of self-efficacy of students with a learning disability and the perceptions of their special education teachers (Higgins, Raskind, Goldberg, & Herman, 2002; Klassen & Lynch, 2007) concluded the teachers attributed student failure to the inherent risks or deficits related to the disability. In the area of behavioral issues, Jackson and Veeneman-Panyan (2002) relate the perception of performance to the structure (classification) and properties (learning characteristics) that dominate the thinking in delivery of services to students with disabilities. The results, although not showing a statistical difference, conform to the literature that risk to the individual is dependent on the perception of the characteristic of the label used to categorize students with disabilities. Regarding resilience, the results generally support the notion that resilience

conforms to the views of effort, competency, and persistence (Margalit, 2003; Meltzer, Roditi,

Houser, & Perlman, 1998) or internal factors (Nelson, Leone, & Rutherford, 2004).

Limitations

The findings reported in the study begin to provide information important to

professionals serving students with disabilities and those training individuals with disabilities.

The study provides research into the area of risk-resiliency suggested by Wong (2003) and

Margalit (2003). However, limitations should be noted. First, the resulting sample size was small

and affected the power of the statistical analysis as well as subsample analysis of the data in the

area of educational levels and experience which proved to significantly different. Second, the

sample drawn from one university in a midwestern state although, a rationale provided by

McCaughey and Strohmer (2005) argue that much research into attitudes has been conducted on

college students and in particular research toward individuals with disabilities and that these

individuals become the next generation of professionals interacting in and influencing their

environment. It should be recognized these two limitations affect the generalizability. Lastly, the

methodological approach in analysis with MDS could allow for other or further interpretations of

the data. Further exploration of the prototypical thinking in this area using cluster analysis may

provide further insight into the dimensional interpretations.

<div align="center">Recommendations</div>

Risk and resiliency factors need to be continually explored from a perspective that is

cognizant of the deficit model (Bryan, 2003) but acknowledges the interaction of the individual

with a disability with his environment (home, school and community) as supported in a more

ecological perspective (Bandura, 1977; Bronfenbrenner, 1979, 1986; Jackson & Veeneman-Panyan, 2002; Kauffman, 2001).

Research. The study revealed some differences in the perceptions of teachers both regular and special education. Further study should examine this area since a supportive adult (Margalit, 2003; Werner & Smith, 1982, 1992, 2002; Wiener, 2002) has been identified as a factor in resilience. Research into teacher preparation needs to be examined in light of a risk-resiliency model since there is a reliance on internal characteristics in the formation of the perceptions. This study assumed the teacher training experience was similar; however teacher experience teaching students with special needs was not explored. Therefore the relationship of teacher variables of training, exposure to disability types, and teacher self-efficacy to the risk and resiliency should be examined. Within social cognitive theory, self-efficacy (Bandura, 1994, 2001) is a resilience factor that may act as a measure of resilience and correlates to it should be examined to provide further insight into a risk-resiliency framework applied to disability research.

Interventions. Recent changes in legislation (Yell, 2006) have moved the assessment and subsequent identification, classification and instruction to a scientifically based approach (Lerner, 2003; Overton, 2006). In light of the results of this study providing support for the view that teachers take a characteristic or inter-individual view of the student labeled with a disability and Bryan's (2003) view that a risk-resiliency framework is more optimistic in its vantage point regarding services to students with disabilities, interventions need to focus on the individual and the support systems for the individual. Areas that should be explored are systems or wrap around approaches (Bosworth & Walz, 2005; Webber & Plotts, 2008). Also, Margolis and McCabe (2004), examined the impact on self-efficacy on struggling learners. The authors emphasized

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"teachers systematically stress the development of high self-efficacy" (p. 241) and discussed how the areas to be addressed.

Figure 11 presents a model based on social cognitive and ecological theory and uses the risk-resiliency framework. It shows the interaction of the individual, at the center core or hub of the wheel and represents the individual personal attributes which by extension if the hub is weak (personal factors) risks are evident. These are mediated through the resiliency factors (spokes)
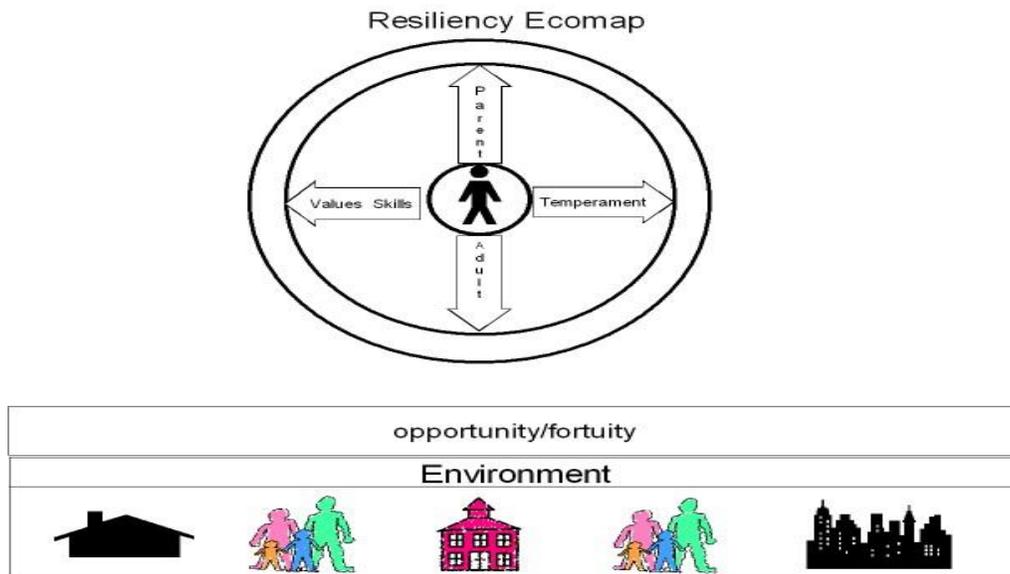
Figure 11. Resiliency Ecomap illustrating a risk-resiliency framework model.

identified by Werner (1993) and are reciprocal to the environmental contexts (Bandura, 1977; Bronfenbrenner, 1979). They provide the supports necessary to buffer interaction with the environment and support development. The fifth resiliency factor, opportunity (Werner, 1993) or fortuity (Bandura, 2001) is represented between the environmental contexts and the wheel, illustrating the opportunities that arise at various times during the development of the individual from the various environmental contexts. Described by Bronfenbrenner and Werner, they usually represent particular trajectories in the individual's life. In keeping with Sontag (1996) and Weber

and Plotts (2008) recommendations, these provide the areas of concern and where the professionals need to evaluate the strengths and deficit in the support systems both internal and external (home, school, and community as well the individual) creating a view to provide intervention to enhance the resiliency of the individual with a disability.

<div align="center">Conclusion</div>

Serving students with special needs is challenging and recent changes in educational legislation in the form of the No Child Left Behind Act and the Individuals with Disabilities Education Improvement Act of 2004 have brought about changes in how we identify and serve children labeled with a disability (Yell, 2006). Over the years, identification and service has been based on a deficit model, exploring the risk posed to the individual by the disability (Drew & Hardman, 2007; Jackson & Veeneman-Panyan, 2002; Kaufman 2001; Lerner, 2003; Salvia & Ysseldyke, 2004; Swanson, 1999).

The study examined two aspects of teachers' perception of risk and resilience in an attempt to explore the perceptions or prototypical thinking of teachers when confronted with a categorical label denoting a disability type. First contrary to the expected findings there were no differences between teacher groups on categorical labels in the areas of risk or resilience using a repeated measure ANOVA. There were differences when examined using a unidimensional and multidimensional approach. This topological examination using a multidimensional analysis (MDS; Davison, 1983; Dunn-Rankin, Knezek, Wallace, & Zhang) led to the conclusion that the teacher groups have a different prototype (Moskowitz, 2005) when it comes to the perception of students along the lines of risk and resilience when presented with the disability label. The

implications for a more ecological approach to the assessment and instruction (Bryan, 2003)

were discussed in light of resiliency factors as identified by Werner (1993) and Margalit (2003).

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Script to be used by the Primary Investigator with the volunteers convened in the designated classroom.

Thank you for volunteering. My name is [PI Name] and I am completing my doctoral work in educational psychology. Again the purpose of the study is to investigate the thinking of experienced teachers regarding the risk and resiliency of students with special needs when identified with a given categorical label.

Before beginning, it is important that you understand the purpose of the study and what is involved. (Informed consent distributed)
The paper you received is called an informed consent. It outlines what we will be doing. As you can see, it tells you about the purpose of the study and that your participation is voluntary. Please note that you may withdraw at any time. Finish reading the document. If after reading, you do not wish to participate, you are free to leave. If you decide to participate, please remain and you will receive a questionnaire. Completion of the questionnaire will imply your consent.

The questionnaire has four parts. Parts I & II will require you to read and compare a series of categorical labels used to identify students with special needs. These labels are:
    Learning Disability
    Speech and Language Impairment
    Mental Retardation
    Emotional Disturbance
    Multiple Disabilities
    Hearing Impairment
    Visual Impairment
    Autism
    Deaf-blindness
    Traumatic Brain Injury
and two labels used in educational groupings
    Bilingual
    Gifted
Does anyone have any questions as to the meaning of these labels (Answer Questions)

In parts I & II you will be asked to make comparisons between students assigned various labels. The comparison will be on how similar you thing the two categories are.

For example: Looking at the academic risk posed by the disability, a Learning Disabled student would be at Less Similar (1) or More Similar (7) when compared to a student who is Hearing Impaired? The scale runs from 1 to 7.

In Part I you will be looking at risk and in Part II you will be looking at resiliency. Further definitions and instructions are in the questionnaire.

Are there any questions I can answer about what you need to do in these 2 sections?

Part III asks you to make a simple rating of each category label on the scale of 1 to 7 for risk and resiliency.

Part IV asks you to complete some demographic information.

Are there any questions or areas of clarification I can answer?

Please open the questionnaire and complete it at your own rate. Answer based on your experience or best judgment. Please complete all items and when finished bring the questionnaire to the desk, take an information/contact card and you may leave.

Thank you for your participation.

APPENDIX B
RISK-RESILIENCY QUESTIONNAIRE

Part I -- Risk

Please look at the categories of students. Rate these categories as to your feelings as to risk. Risk is defined as having academic difficulty in your classroom. The rating is from 1 to 7.

1…|….|….4….|….|….7
Less   More
Similar   Similar

1. The student in your room classified as **Learning Disability** compared to a student with

A Speech-Language Disorder   _____
Mental Retardation   _____
Emotional Disturbance   _____
Multiple Disabilities   _____
Hearing Impairment   _____
Orthopedic Impairment   _____
Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

2. The student in your room classified with a **Speech-Language Disorder** compared to a student with

Mental Retardation   _____
Emotional Disturbance   _____
Multiple Disabilities   _____
Hearing Impairment   _____
Orthopedic Impairment   _____
Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

```
1…|….|….4….|….|….7
```
Less   Greater
Risk   Risk

3. The student in your room with **Mental Retardation** compared to a student with

Emotional Disturbance	_____
Multiple Disabilities	_____
Hearing Impairment	_____
Orthopedic Impairment	_____
Visual Impairment	_____
Autism	_____
Deaf-Blind	_____
Gifted	_____
Bilingual	_____

4. The student in your room classified with an **Emotional Disturbance** compared to a student with

Multiple Disabilities	_____
Hearing Impairment	_____
Orthopedic Impairment	_____
Visual Impairment	_____
Autism	_____
Deaf-Blind	_____
Gifted	_____
Bilingual	_____

5. The student in your room classified with **Multiple Disabilities** compared to a student with

Hearing Impairment	_____
Orthopedic Impairment	_____
Visual Impairment	_____
Autism	_____
Deaf-Blind	_____
Gifted	_____
Bilingual	_____

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```
1…|….|….4….|….|….7
```
Less   More
Similar   Similar

6. The student in your room classified with a **Hearing Impairment** compared to a student with

   Orthopedic Impairment   _____
   Visual Impairment   _____
   Autism   _____
   Deaf-Blind   _____
   Gifted   _____
   Bilingual   _____

7. The student in your room classified with an **Orthopedic Impairment** compared to a student with

   Visual Impairment   _____
   Autism   _____
   Deaf-Blind   _____
   Gifted   _____
   Bilingual   _____

8. The student in your room classified with a **Visual Impairment** compared to a student with

   Autism   _____
   Deaf-Blind   _____
   Gifted   _____
   Bilingual   _____

9. The student in your room classified with **Autism** compared to a student with

   Deaf-Blind   _____
   Gifted   _____
   Bilingual   _____

1…|….|….4….|….|….7
Less   More
Similar   Similar

10. The student in your room classified as **Deaf-Blind** compared to a student classified

Gifted   _____
Bilingual   _____

11. The student in your room classified as **Gifted** compared to a student classified

Bilingual   _____

Please proceed to Part 2

Part II -- Resiliency

Please look at the categories of students. Rate these categories as to your feelings as to resiliency. Resiliency is defined as having internal and external support systems available for example supportive parents, values and skills, or a good sense of self. The rating is from 1 to 7.

$$1…|….|….4….|….|….7$$
Less   More
Similar   Similar

12. The student in your room classified as **Learning Disability** compared to a student with

A Speech-Language Disorder	_____
Mental Retardation	_____
Emotional Disturbance	_____
Multiple Disabilities	_____
Hearing Impairment	_____
Orthopedic Impairment	_____
Visual Impairment	_____
Autism	_____
Deaf-Blind	_____
Gifted	_____
Bilingual	_____

13. The student in your room classified as **Speech-Language Disorder** compared to a student with

Mental Retardation	_____
Emotional Disturbance	_____
Multiple Disabilities	_____
Hearing Impairment	_____
Orthopedic Impairment	_____
Visual Impairment	_____
Autism	_____
Deaf-Blind	_____
Gifted	_____
Bilingual	_____

14. The student in your room with **Mental Retardation** compared to a student with

Emotional Disturbance   _____
Multiple Disabilities   _____
Hearing Impairment   _____
Orthopedic Impairment   _____
Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

15. The student in your room classified as **Emotional Disturbance** compared to a student with

Multiple Disabilities   _____
Hearing Impairment   _____
Orthopedic Impairment   _____
Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

16. The student in your room classified as **Multiple Disabilities** compared to a student with

Hearing Impairment   _____
Orthopedic Impairment   _____
Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

17. The student in your room classified as **Hearing Impaired** compared to a student with

Orthopedic Impairment   _____
Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

```
1…|….|….4….|….|….7
Less              More
Similar           Similar
```

18. The student in your room classified with an **Orthopedic Impairment** compared to a
    student with

Visual Impairment   _____
Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

19. The student in your room classified with a **Visual Impairment** compared to a student
    with

Autism   _____
Deaf-Blind   _____
Gifted   _____
Bilingual   _____

20. The student in your room classified with **Autism** compared to a student with

Deaf-Blind   _____
Gifted   _____
Bilingual   _____

21. The student in your room classified as **Deaf-Blind** compared to a student classified

Gifted   _____
Bilingual   _____

22. The student in your room classified as **Gifted** compared to a student classified

Bilingual   _____

Please proceed to Part 3

6
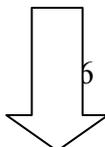
Part III -- Categories

Please rate the categories as you see them in terms of the risk they pose to the individual student and the resiliency of these students.

1…|….|….4….|….|….7
Low   High
Risk/Resiliency   Risk/Resiliency

	Risk	Resiliency
A Speech-Language Disorder	_____	_____
Mental Retardation	_____	_____
Emotional Disturbance	_____	_____
Multiple Disabilities	_____	_____
Hearing Impairment	_____	_____
Orthopedic Impairment	_____	_____
Visual Impairment	_____	_____
Autism	_____	_____
Deaf-Blind	_____	_____
Gifted	_____	_____
Bilingual	_____	_____
Learning Disability	_____	_____

Please proceed to Part 4
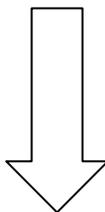
Part IV -- Demographic Information

Circle the correct information:

Gender: M   F

Education Level (Highest):   Bachelors   Masters   Doctorate

Assignment: Regular Education   Special Education

Level: Primary   Intermediate   Jr. H.S.   High School

Enter the following information:

Number of years teaching: _____