# META-SYNTHESIS OF PRACTITIONER JOURNALS TO ANALYZE TYPE, RATE AND QUALITY OF PUBLISHED ARTICLES TO SUPPORT STUDENTS WITH LEARNING DISABILITIES

A Thesis

by

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Submitted to the Office of Graduate Studies
of Texas A&M University-Commerce
in partial fulfillment of the requirements
for the degree of
MASTER OF EDUCATION
May 2014

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ABSTRACT

META-SYNTHESIS OF PRACTITIONER JOURNALS TO ANALYZE TYPE, RATE AND QUALITY OF PUBLISHED ARTICLES TO SUPPORT STUDENTS WITH LEARNING DISABILITIES

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Texas A&M University-Commerce, 2014

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A synthesis was conducted to determine the quality and rate of articles published in two prominent journals over the last decade -2003-2013- in the field of special education to help students with Learning Disabilities. In general, analyses of the journals *Teaching Exceptional Children* and *Intervention in School and Clinic* revealed that a small portion (17.9%) of 1030 published articles were evidence-based practices. The journals were mostly concerned with elementary school and reading. The articles covered a wide range of topics on special education for students with disabilities and students who are gifted.

Dedicated

I dedicate this thesis to the memory of my beloved father Saeed Alhazmi, who passed away in February 2012 during the first term of my master's degree.

# ACKNOWLEDGEMENTS

I want to especially thank my advisor Dr. Brittany Hott for the priceless advice and assistance I was given. My advisor's generous constant support, direction, and comments helped me to overcome all barriers. Without your guidelines, I would not be as I am. I am very grateful to have had opportunity to work with you.

I would like to thank my committee members for their support and guidance during this entire process, Dr. Beth Jones and Dr. Lois Hogan. Without your inspiration and direction, this thesis would not be as complete and thorough.

I want to thank my family for their love and support. I especially would like to thank my mother for her love and support by consistently calling me from overseas. I would like to thank my niece, Maha Alqurafi for her support and encouragement. I would also like to thank my scholarship program (KASP) for funding my education and Saudi Culture Mission (SACM) at Washington, USA for facilitating process and support.

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# INTRODUCTION

## Prevalence and Definition

Students with learning disabilities (LDs) are the biggest population of students who access special education services in the country according to the National Center for Learning Disabilities (NCLD, 2014). About 5% of American school-aged children have LDs. More specifically, 2.4 million (42%) of the 5.7 million children served under the Individuals with Disabilities Education Act of (IDEA) 2004 are students with LDs. (NCLD, 2014). Nevertheless, the exact prevalence of children with LDs in the U.S. is unknown because statistics largely depend on surveys of parents, self-reports, and reports from schools (Cortiella, 2011). Furthermore, the definition of a LD remains a complex issue because of disagreements about criteria (Eisenmajer, Ross, & Pratt, 2005), ideology (Richert, 2007), and continuing changes in knowledge about LDs (Scanlon, 2013), among other reasons. The most common definition of a LD comes from the federal special education law, IDEA (2004), which employs the terminology *specific learning disability* (SLD). SLD pertains to a disorder that affects one or more fundamental psychological processes used in comprehending and expressing language verbally or through the written form and can affect a person's capability in listening, thinking, speaking, reading, writing, spelling, or performing mathematical tasks (Cortiella, 2011; IDEA, 2004; Taylor, Smiley, & Richards, 2008). The definition includes those disorders that are products of brain injuries, but excludes learning problems that arise from visual, hearing, or motor disabilities, or mental and emotional illnesses, or economic difficulties (National Center on Birth Defects and Developmental Disabilities, Division of Birth Defects, 2011; Taylor et al., 2008;

Wisconsin Department of Public Instruction, n.d.). The three common kinds of LDs are dyslexia, dysgraphia, and dyscalculia.

The APA provided another definition of LD in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, 1994) which stated that learning disorders are disorders that impair learning enough to produce academic outcomes that are below the average expectation for a person's age, intelligence level, and schooling. Kavale, Spaulding, and Beam (2009) criticized the abovementioned definitions because they are vague and use concepts/terms that are not clearly defined. They presented a definition of SLD, where it pertains to a heterogeneous group of disorders that can greatly derail the usual progress of academic success in 2% to 3% of the student population (Kavale et al., 2009). Academic progress of these students is below expectations, considering the actual mental and chronological ages of the students, even when these students are given high-quality teaching, (Kavale et al., 2009). The main evidence of academic failure can be seen in noticeable underachievement in basic areas, such as reading, math, and/or writing, and is not connected with inadequate educational, social, cultural, and/or socio-linguistic conditions (Kavale et al., 2009). The SLD definition is a work in progress, especially as scholars continue to gain insight and accumulate evidence on the causes and effects of SLD on diverse social and academic skills of students.

**Intervention**

The federal government has not mandated any specific means of diagnosing children with LDs, and some states have different approaches in identifying and helping students with LDs (Aaron, Joshi & Gooden, 2008; Youman & Mather, 2013). The two means of identifying students with LDs are the discrepancy model and the response to intervention (RTI) model. Benson and Newman (2010) and Kavale (2001) define the discrepancy model as a way of

identifying students by comparing gaps in academic skills. Stuebing, Fletcher, and Branum-Martin (2012) depicted the Discrepancy/Consistency Method (D/CM). This method studies the gaps between achievement and skills through particular tests, specifically investigating the Planning, Attention, Simultaneous, and Successive (PASS) factors of intelligence (Stuebing et al., 2012).

An alternative approach to identifying students with LDs is RTI. RTI focuses on positive assessment methods which measure students' responses to evidence-based interventions (Büttner & Hasselhorn, 2011; Taylor et al., 2008). Fuchs, Mock, Morgan and Young (2003) illustrated two kinds of RTI according to differences in individualization and standardization. The "problem-solving approach" helps an individual child by studying his/her strengths and weaknesses and forming proper individualized interventions, which practitioners often prefer, while the "standard-protocol approach" depends on standardized evidence-based interventions that can be customized to individuals or groups of children. Fletcher, Coulter, Reschly, and Vaughn (2004) underscored that RTI, nevertheless, must still be seen as one of the criteria for determining if students have LDs.

Givens et al. (2007) defined RTI as a practice that seeks to address the academic and behavioral needs of students by offering services with the following elements:

1. High-quality instruction interventions that address the individual needs of students.
2. Students should be monitored frequently in order to reach result-based decisions.
3. The student response data should be considered extensively in educational decision making (Kavale, Holdnack, & Mostert, 2006).

In Tier I, instructions are provided to some students with intense academic problems, differentiation, and time on task. Tier II provides greater intensive instructions and intervention for a smaller number of students who have not improved. For Tier III, intervention depends on

the students' progress, where the results of the intervention assessment determine the level of intervention provided to the student. There is also continuous monitoring to ensure that there is a positive response to interventions being made.

**IQ- achievement Discrepancy Model VS Response-to-Intervention Framework**

IDEA (2004) favors a Response To Intervention (RTI) approach and allows local education agencies (LEAs) to utilize RTI for determining students who have learning disabilities. The IDEA 2004, however, does not resolve whether the IQ- achievement Discrepancy Model or RTI is the most effective model in identifying students at-risk for a SLD. This section compares the IQ- achievement Discrepancy Model with RTI.

Lindstrom and Sayeski (2013) compared and contrasted RTI with the IQ-achievement discrepancy model using comprehensive criteria, while other scholars provided evidence that can be integrated into this criteria or expand upon it. Both the IQ-achievement discrepancy approach (IQADA) and RTI approach do not have sufficient discriminant validity and reliability. IQADA does not differentiate children with SLDs and those who are low achievers but have no SLDs, which Stanovich (2005) explained through underscoring that psychological and cognitive processes that underlie several kinds of SLDs are not correlated with IQ ( Lindstrom & Sayeski, 2013). RTI has the strength of a problem-solving approach using evidence-based interventions (Kamei-Hannan, Holbrook, & Ricci, 2012), but it does not offer agreement on the meaning of "responsiveness" and different measurement systems utilizing different criteria outcomes in determining different student groups (Büttner & Hasselhorn, 2011; Hauerwas, Brown, & Scott, 2013; Lindstrom & Sayeski, 2013). Lipson and Wixson (2012) cautioned against treating RTI as a one-size-fits-all approach and recommended a "nuanced response" for vulnerable students.

The next concern is the insufficiency of assessment procedures. IQADA is criticized for making eligibility decisions based on a single score (considered as the difference). For instance, verbal IQ and reading skills are highly correlated, wherein poor reading skills can result in low IQ scores, which, consequently, decrease the discrepancy between IQ and achievement (Lindstrom & Sayeski, 2013). Swanson (2012) noted the need for improved assessment procedures because "current interventions do not appear powerful enough to completely eliminate pretest differences for children at risk for LD" (p.174). For RTI, measures and assessment procedures that include other areas in the SLD definition (Büttner & Hasselhorn, 2011), particularly, at the secondary level, are not yet produced (Lindstrom & Sayeski, 2013; Tyre, Feuerborn, Beisse, & McCready, 2012). The absence of measures and assessment procedures for secondary levels and other SLD areas could be one of the reasons why RTI acceptability is low for school psychologists who work in the middle and high school levels (O'Donnell, 2007; O'Donnell & Miller, 2011). Vanderheyden (2011) asserted that practitioners can employ classification agreement analyses to inspect and improve the utility of their decision procedures and criteria in RTI implementations.

Another concern is the "wait to fail" or "watch them fail" implication of these approaches. IQADA waits for students to fail because students are not identified in early grades, such as kindergarten to a third grade, for they are not old enough to show IQ discrepancy, and so it does not offer early academic intervention (Lindstrom & Sayeski, 2013). In RTI, students can stay at tiers for a long period and there is a lack of consistency regarding model implementation (Kavale, Holdnack, & Mostert, 2006). Furthermore, RTI approaches have been criticized due to ambiguous intervention guidelines. It is subjective process, which teachers decide what kind of interventions to provide. Also, it needs consistent adjustment according to student performance (Coyne et al., 2013, Lindstrom & Sayeski, 2013). Powers and Mandal (2011) and Sanger, Friedli, Brunken, Snow, and Ritzman (2012) asserted the importance of professionals with expertise in different SLDs to improve the effectiveness of RTI.

Poor predictive utility is also one of the concerns for these approaches. The IQ-achievement discrepancy poorly predicts response to intervention and recognition based on performance profiles. Also, it does not lead to improved treatment and does not shape instruction (Lindstrom & Sayeski, 2013). For RTI, an earlier screening measure may be less valid and strong as a predictor. Its measures that inform early intervention for kindergarten may be less accurate for slightly older children (Lindstrom & Sayeski, 2013). Restori, Katz, and Lee (2009) cited psychologists who believed that, aside from using RTI, educators should employ IQ tests as an essential part of a wide-ranging assessment for determining students who might have SLDs. These researchers argued that students who do not respond to interventions while on an RTI framework should also undertake IQ tests to assist school psychologists and other professionals in recognizing the cognitive or psychological processes that are hindering a student's academic performance (Restori et al., 2009).

## Statement of the Problem

*Learning disability* has several definitions because of different criteria and approaches to defining LD. Nevertheless, LD generally refers to learning disorders that can affect academic outcomes, and are not connected to inadequate educational, social, cultural, and/or socio-linguistic conditions. *Learning disability* is highly prevalent among students accessing special education services. Two means of identifying students with LDs are the discrepancy model and the RTI model, which are different in their ways of assessing the "disability" of students. These LDs have varying impacts on the academic skills of students, and without proper interventions, they can seriously derail students' academic and social functioning. Hence, schools and the government have significant roles to play in identifying students with LDs, so that students can access proper treatment and educational interventions.

## Purpose of the Study

The purpose of this study is to report the type, rate, and quality of interventions that utilize scientific evidence-based practice strategies for students with LDs. Teachers and practitioners of special education are seeking to learn more about effective interventions based on scientific research, as required by the IDEA Act of 2004 and NCLB Act of 2001. To guide them in better understanding the field of LD, it would be helpful to improve their knowledge and skills related to identifying evidence based practices for students with LDs. This paper provides a synthesis of articles from two prominent journals in special education to determine types of topics published for students with LDs over the last decade. The justification is the attainment of crucial knowledge and training for practitioners.

## Research Questions

The research questions are the following:

1. What types of articles are published in prominent practitioner journals to assist teachers working with students who have learning disabilities?
2. What are the characteristics of published intervention literature for students with learning disabilities?

## Hypotheses

The hypotheses are presented below:

1. Practitioner journals in the field of *learning disability* publish consistent, solid articles about interventions based on current rigors and scientific methods.
2. Articles published are evidenced-based.
3. More recent publications will include more interventions for teachers to use in general education classrooms.

## Significance of the Study

The study seeks to help practitioners of special education learn more about evidence-based practice by synthesizing the latest evidence-based interventions being used and tested today.

Specifically, the significance of the study is the following:

1. To fill the gap in the literature with regard to the interests for teachers of special education.
2. To contribute a synthesis that would directly help practitioners by accumulating evidence-based practices from different organizations.
3. To offer decision-makers research-based guidance for intervention with students with learning disabilities in grades K-12.

## Method of Procedure

The study employed quantitative methods of research. Using descriptive research, the study focused on the current teaching effectiveness of 18 instructional strategies mentioned by the TeachingLD website.

### Selection of Sample

Studies for the synthesis were located by searching two academic journals for special education practitioners: *Intervention in School and Clinic* (ISC) and *Teaching Exceptional Children* (TEC). Included articles were published in the last decade, between 2003 and 2013.

### Collection of Data

Step 1: Journal copies published since 2003 were obtained.

Step 2: Articles were downloaded and organized into DropBox. PDFS were created for each article.

## Treatment of the Data

Data were examined and described according to developed coding sheet.

## Definitions of Terms

***Evidence-Based Practice.*** An evidence-based practice is an instructional strategy, technique, method, intervention, or teaching program that has demonstrated consistent positive results on students learning when experimentally tested (Mesibov & Shea, 2011; Simpson, 2005). According to the federal special education law, No Child Left Behind Act (NCLB), evidence-based research is "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs" (NCLB, 20 U.S.C 7801 § 9101[37]).

***Intervention.*** An intervention refers to an instructional strategy that is used to deliver content to students and improve student achievement. The term *intervention* is synonymous with instructional strategies, teaching methods, teaching practices, educational methods, educational programs, and similar terms (Reichow, Volkmar, and Cicchetti, 2008).

***Accommodation.*** Accommodations are changes made to the teaching procedures or assessment in order to assist students to access a general education curriculum without changing the content. It provides an opportunity for students to demonstrate skills and knowledge by eliminating or reducing obstacles caused by their disabilities (Skinner, Pappas, & Davis, 2005).

***Strategy***. Strategy is an instructional practice that is used to deliver content to a student and improve student achievement (Reichow et al., 2008).

***Teaching methods.*** Teaching methods are methods that teachers use to instruct students using their curriculum and they are included in interventions used for different students (Horner et al., 2005; Kazdin, 1982).

***Teaching practices.*** Teaching practices are either the application of teaching methods or additional practices not stipulated in designed methods but are reflective of teaching styles or personalities (Petrina, in Press).

## Limitations

The study is limited in many ways. First, the study's analyses were guided by the 18 teaching interventions mentioned by TeachingLD.org. This source may have overlooked other effective EBPs. Second, it was limited to the timeframe of 2003-2013 and content from *Teaching Exceptional Children* and *Intervention in School and Clinic*. Third, it was also limited to the resources and organizations it has relied on for research and synthesis. This study could be replicated by choosing another timeframe, other peer reviewed journals, other disabilities, or more combinations.

# Chapter 2

# LITERATURE REVIEW

There is much current interest in the impact of evidence-based practices on students with special needs. Practitioners seek to implement and be knowledgeable about evidence-based practices. Therefore, professional organizations specializing in Special Education consider grounding themselves in empirical strategies to assist practitioners in adequately addressing the needs of students with disabilities.

This chapter provides brief descriptions about common kinds of learning disabilities, evidence-based practices, the National Joint Committee on Learning Disabilities (NJCLD) and its member organizations, and the best evidence-based practices for students with learning disabilities according to TeachingLD.org.

## Common Kinds of Learning Disabilities

Three of the most common kinds of LDs are dyslexia, dysgraphia, and dyscalculia. Dyslexia refers to problems in reading (decoding and encoding), and has been also called word blindness (Carlson, 2005; Youman & Mather, 2013) or a reading disorder (DSM-IV) (APA, 1994). Dyslexia is a neurobiological disorder that impacts people's ability to sequence words and decode words because of an inability to use sound-spelling relationships. They also experience difficulties in spelling, writing, and/or speaking (Ritchey, 2011). Dyslexia's prevalence is hard to determine, but it has been reported to affect 5% to 17% of the American school-age children (Shaywitz, S. & Shaywitz, B, 2003). A statistic by NCLD (2014) indicates that even the public school enrollment is divided equally between both genders, male school-age children with dyslexia are counted to be about 66%. Referral procedures may be more biased to identifying males since they usually exhibit disruptive behaviors in connection to LD

(NCLD, 2014). Furthermore, though the symptoms of dyslexia are hard to determine, symptoms may arise as early as in kindergarten, although it is not usually diagnosed before kindergarten ends or before first grade starts, since formal reading does not happen until this grade level (APA, 1994). In addition, dyslexia can be more prevalent for first-degree biological relatives of individuals with LDs (APA, 1994).

Two other common LDs are dysgraphia and dyscalculia. Dysgraphia pertains to disorders in motor skills and processing, wherein children have problems putting their thoughts into writing, even when they already comprehend the class material (APA, 1994; Crouch & Jakubecy, 2007). Some of the symptoms of dysgraphia are poor handwriting, discomfort holding pencils, troubles in writing proper-sized and aligned letters, and difficulty organizing thoughts (NCLD, 2014). Children with dyslexia frequently have dysgraphia, so experts can hardly determine the prevalence of students with dysgraphia (NCLD, 2014). Dysgraphia prevalence is still unknown, but it is estimated that 5% to 20% of the school-age children show some form of deficit writing signs (Pechman, 2010). Another kind of LDs is dyscalculia. It affects children's aptitude to appreciate and/or solve mathematical problems in school and it presents problems in completing other tasks that need mathematical skills (APA, 1994; Pechman, 2010). Dyscalculia affects approximately 3% - 6% of school-age students (Rotzera et al. 2008,). Some of the symptoms of dyscalculia are problems in recognizing numbers, determining patterns, math calculation, and counting (NCLD, 2006).

## Organizations

Learning disability organizations support their overarching mission of enhancing learning outcomes for students with learning disabilities in different ways. These professional organizations have adopted evidence-based practices in conducting their own research and

developing LD interventions, which is important to the scientific approach of understanding and responding to the needs and concerns of students with LDs (Horner et al., 2005; Pool, Macy, McManus, Noh, 2008) with emphasis on developing quality indicators for EBPs (Cook, Shepherd, Cook & Cook, 2012, Gersten et al., 2005). Their focus on EBPs is specifically articulated in their websites, under pages like "About Us," "Values," or "Vision" (CEC, 2013; ASHA, 2013). LD organizations further provide guidelines, resources, and tools on how to conduct research that leads to EBP. In addition, they support the implementation of EBP practices in school by training practitioners, publishing articles, conducting discussion forums and webinars, and making other social media efforts. In the field of learning disabilities, the National Joint Committee on Learning Disabilities and its member organizations are seen as good resources that assist special education students and teachers alike in judging the quality of LD interventions. For instance, one of the members of NJCLD, the Council for Learning Disabilities (CLD) is an international organization that contributes to evidence-based teaching through collaboration, research, leadership, and advocacy (CLD, 2013). The Council for Exceptional Children is also concerned with developing quality method that lead to EBPs (Odom et al., 2005). NJLCD and its members have already published articles that have impacted practitioners and the field of special education through providing EBP criteria and guidelines (McLeskey, 2004  McLeskey & Landers, 2006). An example is the work of Reutzel, (2009, April 14), "Reading Fluency: What Every SLP and Teacher Should Know," published in *The ASHA Leader*. Hence these organizations emphasize the publishing, review, application, and development of innovative and successful LD methods and materials that are grounded on existing evidence-based practice for use in diverse educational programs and settings.

**National Joint Committee on Learning Disabilities (NJCLD)**

The history of the National Joint Committee on Learning Disabilities (NJCLD) has no concrete roost, apart from the view that it began when the first individual experienced the challenges of having a learning disability, and the growth of interest of professionals in the population of people with learning disabilities (Abrams, 1987). Abrams reported that the term *learning disability* was coined in the 1960s, but it was only in the 1970s that different professionals decided to work together to resolve their tunnel thinking approach to learning disabilities. The International Reading Association together with the Division for Children with Learning Disabilities (currently Council for Learning Disabilities) with other professionals informed the Joint Committee on Learning Disabilities (JCLD) in 1975, with their first official conferences held on October 15 and 16, 1975 (Abrams, 1987). By the 1980s, JCLD was changed to the National Joint Committee on Learning Disabilities (NJCLD), where a steering committee was made with a representative from each organization, and where meetings took place twice a year (Abrams, 1987). Since then, the NJLCD has made significant progress in preparing position papers and uniting diverse organizations (Abrams, 1987).

One of the main concerns of the NJLCD is its membership selection process because it wants to ensure that no single organization exerts too much influence on the NJLCD, while not being too exclusive and too large to be productive (Abrams, 1987). In February of 1985, the NJLCD approved its membership criteria and review processes. For organizations that want to be members of the NJLCD, they must have the following characteristics: (1) Represent a national-level group; (2) Be dedicated to the education and students with the learning disability; and (3) Possess a structured subgroup that is concentrated on the *learning disability* (Abrams, 1987). Organizations that want to be NJLCD members will then do the following steps: (1) Send

a letter of interest to the NJLCD chairman; (2) Determine and show the categories of its members, e.g. regular, associate, student, and others; (3) Identify its particular areas of interest and expertise in learning disabilities; (4) Send its constitution and bylaws together with a letter of interest; and (5) Through an initiation from the NJLCD, send representatives as observers to at least one NJLCD meeting before the former votes on its membership (Abrams, 1987). Afterwards, the NJLCD will: (1) Assess the letter of intent and included contents of the applicant; (2) Invite representatives of that organization to observe at least one NJLCD meeting; (3) Approve the membership after acquiring a two-thirds vote of the NJLCD member organization, where each organization shall have a single vote; and (4) Inform an applying organization of its membership status (Abrams, 1987). The organizations that left the NJCLD did so on their own accord and for their own reasons. For example, membership in the NJLCD did not meet their goals, they did not want to expend resources in that manner, the NJCLD was not meeting their mission, or a host of other reasons. The CEC organizations are treated as separate with separate representatives. Each of the NJCLD organizations are allotted three representatives but only one vote is registered for each organization.

As for its mission, the NJCLD aims to offer inter-organizational leadership and resources to help students with disabilities. The primary goals of NJCLD are: (1) To assist in the communication and cooperation processes and interactions for all member organizations; (2) To offer an interdisciplinary opportunity for understanding issues for educational and governmental agencies, and to become a resource committee for related agencies and interested organizations; (3) To respond to national issues that affect students with learning disabilities; (4) To help member organizations reach agreements on important issues/problems that influence the conditions of students with learning disabilities; (5) To arrange and distribute statements to

different media, so that they can shed light on issues within the discipline of learning disabilities; and (6) To recognize research and service delivery requirements in learning disabilities (LD Online, 2013; National Joint Committee on Learning Disabilities, 2013).

The member organizations of NJLCD are the following: (1) American Speech-Language-Hearing Association (ASHA); (2) Association on Higher Education and Disability (AHEAD); (3) Association of Educational Therapists (AET); (4) Council for Learning Disabilities(CLD); 5) Division for Communicative Disabilities and Deafness, Council for Exceptional Children (CEC) (DCDD); (6) Division for Learning Disabilities (DLD); (7) International Dyslexia Association (IDA); (8) International Reading Association (IRA); (9) Learning Disabilities Association of America (LDA); (10) National Association of School Psychologists (NASP), and (11) National Center for Learning Disabilities (NCLD).

NJLCD offers its own definition of *learning disability*. It states that *learning disability* is a wide-ranging term that pertains to a "heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities" (Foster & Bolton, 2010). To be seen as a disability, the disorder(s) must considerably hinder a foremost life activity (Foster & Bolton, 2010). These disorders are inherent to the individual, which may be caused by central nervous system problems, and may happen anytime within a person's lifespan (Foster & Bolton; Visser, 2000). Students with LDs may also experience problems in self-regulation, social perception, and social interaction, though these problems can be learning disabilities in themselves (Hallahan, 2007). While learning disabilities may happen alongside other handicapping problems (such as sensory impairment, intellectual disabilities, or severe emotional disturbance) or with external causes (such as cultural differences, and inadequate or improper instruction). They are not the outcomes

of these problems and external causes (National Joint Committee on Learning Disabilities, 1988, as cited in Hallahan, 2007).

Some of the particular kinds of learning disabilities, according to the NJCLD, are: (1) Dysgraphia, when people have a hard time with the physical ability of writing letters and words through pen and paper and in creating legible handwriting; (2) Dyscalculia, when people have problems in understanding and using math models and symbols; (3) Dyslexia, when people can jumble letters in words or sentences while reading, and they also have problems in spelling words while writing; (4) Dyspraxia, when people jumble words and sentences while talking; (5) Non-verbal Learning Disorder, when people have insufficient skills in motor coordination, visual-spatial organization and/or social skills; and (6) Auditory Processing Disorder, when people intermittently experiences an inability to process verbal information (University of Washington, The Faculty Room, n.d.).

**Difficulties**

Some of the difficulties in conducting research on these organizations are a lack of access to needed information about the organizations and delayed or no response from these organizations. First, the National Joint Committee on Learning Disabilities (NJCLD) does not have an informative website, where only the LDOnline website significantly supports it. Writing to the NJCLD has not yielded any comprehensive response regarding the interventions used per member organization. Second, not all of the member organizations have accessible journals on the interventions they use for their students. Third, some of the organizations do not update their websites about the current number of members.

**American Speech-Language-Hearing Association (ASHA)**

ASHA is the "national professional, scientific, and credentialing association for more than 166,000 members and affiliates who are audiologists, speech-language pathologists, speech, language, and hearing scientists, audiology and speech-language pathology support personnel, and students" (ASHA, 2013, para. 1). Audiologists are specialized in preventing and evaluating hearing and balance disorders and providing audiologic treatment (ASHA, 2013). Speech-language pathologists recognize, evaluate, and care for speech and language problems (ASHA, 2013). The vision of ASHA is: "Making effective communication, a human right, accessible and achievable for all." Its mission is: "Empowering and supporting [members] through: advancing science, setting standards, fostering excellence in professional practice, and advocating for members and those they serve" (ASHA, 2013, para. 3).

**Council for Learning Disabilities (CLD)**

The Council for Learning Disabilities (CLD) is an international organization that contributes to evidence-based teaching through collaboration, research, leadership, and advocacy (CLD, 2013). CLD is made of professionals who correspond to varied disciplines and are dedicated to improving the education and quality of life for individuals with learning disabilities and others who have similar learning difficulties (CLD, 2013). The vision of CLD is: "to include all educators, researchers, administrators, and support personnel to improve the education and quality of life for individuals with learning disabilities" (CLD, 2013, para. 4).

**Learning Disabilities Association (LDA)**

The Learning Disabilities Association of America (LDA) is a national network of volunteers with individual members who have learning disabilities, as well as their families, and the professionals who work alongside them (LDA, n.d.). LDA is the biggest non-profit volunteer

organization promoting the interests of individuals with learning disabilities (LDA, n.d.). The vision of LDA is: "All individuals with learning disabilities are empowered to thrive and participate fully in society; The incidence of learning disabilities is reduced; And learning disabilities are universally understood and effectively addressed" (LDA, n.d., para. 1). The mission of LDA is "to create opportunities for success for all individuals affected by learning disabilities and to reduce the incidence of learning disabilities in future generations. LDA accomplishes its goals and objectives" (LDA, n.d., para. 2).

**Association on Higher Education and Disability (AHEAD)**

AHEAD is a professional membership organization for members who work toward the development of policy and they try to improve the quality of services for people with learning disabilities in higher education (AHEAD, n.d.). AHEAD has more than 2,500 members throughout the United States, Canada, England, Australia, Ireland, Northern Ireland, New Zealand, South Africa, Sweden, Japan, and Greece. AHEAD has further formal partnerships with 30 regional affiliates and many other professional organizations working to promote equity in higher education for people with disabilities (AHEAD, n.d.).

**Association of Educational Therapists (AET)**

The Association of Educational Therapists (AET) is the national professional organization committed to determining the professional practice of educational therapy, determining standards for ethical practice, and advancing state-of-the-art service delivery through on-going professional development and training programs. AET offers information to the public about educational therapy (AET, n.d.). The mission of the Association of Educational Therapists is to: "Provide leadership, certification, and training to educational therapy professionals, promote collaboration with allied professionals, and facilitate public access to

educational therapy services" (AET, n.d., para. 4).

**Division for Communicative Disabilities and Deafness (DCDD)**

The Division for Communicative Disabilities and Deafness (DCDD) is focused on studying and promoting the welfare, development, and education of infants, toddlers, children, and youth with communication and learning disorders and/or who are deaf or hard of hearing. DCDD seeks to offer information to professionals and families regarding (a) the development of communication and learning abilities, (b) the avoidance of communication and learning disorders, and (c) evidence-based assessments and intervention practices for individuals with speech, language, learning, and/or hearing difficulties (DCDD, n.d.).

**Council for Exceptional Children**

The Council for Exceptional Children (CEC) is the largest international professional organization committed to enhancing the educational success of children and youth with disabilities, gifts, and talents. It helps teachers, school administrators, and related service providers to properly implement recent changes to the United States' primary special education laws (CEC, 2011). CEC has a mission to "improve, through excellence and advocacy, the education and quality of life for children and youth with exceptionalities and to enhance the engagement of their families" (CEC, 2011, para. 4).

**Division for Learning Disabilities (DLD)**

The Division for Learning Disabilities (DLD) is one of 17 special interest groups of the Council for Exceptional Children (CEC). DLD serves students with learning disabilities and the professionals who serve them. DLD encourages efforts to meet the needs of more 2.8 million school-aged children and youth presently receiving special education services for identified learning disabilities in the United States (DLD, 2013)

**International Dyslexia Association (IDA)**

The International Dyslexia Association (IDA) is a 501(c) (3) non-profit, scientific, and educational organization committed to the study and treatment of the learning disability, dyslexia, and similar language-based learning differences. It is the oldest such organization in the U.S. serving individuals with dyslexia, their families, and professionals in the field. It has around 8,500 members, 60% in the field of education and 30% are individuals with dyslexia or parents of children who are dyslexic (IDA, n.d.).

**International Reading Association (IRA)**

Established in 1956, IRA is a nonprofit, international network of individuals and institutions dedicated to improving the global rate of literacy. It has more than 60,000 members and it supports literacy professionals through different resources, advocacy efforts, volunteerism, and professional development activities. Its members encourage literacy through: "Improving the quality of reading instruction, disseminating research and information about reading, and encouraging a lifetime reading habit" (IRA, n.d., para 1).

**National Association of School Psychologists (NASP)**

The National Association of School Psychologists (NASP) empowers school psychologists by advancing effective practices to improve students' learning, behavior, and mental health. Its vision is for "All children and youth to thrive in school, at home, and throughout life" (NASP, 2012, para. 1). Its mission is: "The National Association of School Psychologists (NASP) empowers school psychologists by advancing effective practices to improve students' learning, behavior, and mental health" (NASP, 2012, para. 2).

### National Center for Learning Disabilities (NCLD)

The National Center for Learning Disabilities (NCLD) team seeks to contribute to the making of a society in which every individual has the academic, social and emotional skills needed to do well in school, at work, and in life. It aims to enhance the lives of all people with learning difficulties and disabilities by empowering parents, enabling young adults, transforming schools, and creating policy and advocacy impact. Its vision is: "a society in which every individual possesses the academic, social, and emotional skills needed to succeed in school, at work and in life" (NCLD, n.d., para 2). NCLD was founded in 1977 by Pete and Carrie Rozelle as the Foundation for Children with Learning Disabilities, where the organization offered leadership, public awareness, and grants to support research and innovative practices in learning disabilities (NCLD, n.d.)

## Evidence-Based Practices

Evidence-Based Practices (EBPs) have been gaining ground in different fields, including special education, because it merges rigorous scientific research with different teaching approaches that have improved/can improve diverse student outcomes (Brackenbury, Burroughs, & Hewitt, 2008; Torres, Farley, & Cook, 2012). Furthermore, educators commonly concur that scientific research can be used to design, change, evaluate, and enhance educational systems, policies, and practices to achieve better student performance (Cook & Odom, 2013; Odom & Wolery, 2003). Due to EBPs' appeal to educators (Burns & Ysseldyke, 2009) and the increasing demand of filling the research-to-practice gap in education in general and special education in specific (Burns & Ysseldyke, 2009), the U.S. Congress already requires schools and teachers to employ instructional programs and practices that are based on scientific research (Dalton & Roush, 2010; U.S. Department of Education, 2008). EBPs, however, are not without challenges,

especially when scholars differ in their definitions of EBP and its subsequent research designs, quality indicators, and effects (Cook & Odom, 2013; Odom et al., 2005; Thompson et al., 2005).

**Definitions of Evidence-Based Practices (EBPs)**

EBP has its roots from the medicine field, and one of its common definitions is based on a clinical model. Sackett et al. (1996) asserted that EBP is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients," where individual expertise is combined with the most recent, valid research (P. 71, as cited in Brackenbury et al., 2008, p. 78). This definition has its strengths because of its combination of individual expertise and available valid evidence, and its flexibility in customizing decisions according to situational and client-specific differences (Brackenbury et al., 2008). However, several scholars underscored the importance of determining first the research designs, quality indicators, and effects that can make a study qualify as producing or leading to EBP (Cook & Odom 2013; Odom et al., 2005; Thompson et al., 2005). Quality indicators and guidelines must sufficiently guide educators on determining studies that offer credible EBPs for special education students (Cook & Odom, 2013; Odom et al. 2005; Thompson et al., 2005).

Another definition comes from the federal definition of EBP, which is based on the federal special education law, No Child Left Behind (NCLB). NCLB defines EBP as "research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs" (NCLB, 20 U.S.C 7801 § 9101[37]). An implicit assumption of this definition is that "highly qualified" teachers are educating students, which is a great challenge for teachers who are trained for general education. In fact, many of these educators have little to no preparation in responding to students with learning and behavioral differences (Niesyn, 2009). Scholars underscored that many students

with special needs are not being properly served in the public education system because of delays or problems in identifying them, among other causes. Therefore, teachers bear the burden of improving the learning outcomes of students with or without disabilities (Nguyen, 2012; Niesyn, 2009). This reality reinforces problems in identifying EBP in mainstream classes that include both students with or without disabilities because of professional development issues and EBP identification concerns (Nguyen, 2012; Niesyn, 2009).

One more definition of EBPs highlights the importance of quality outcomes and research designs. Cook and Odom (2013) defined EBPs as consisting of programs and practices that have significant positive effects on student outcomes through their dependence on scientific research. They stressed that this definition assumes that existing practices are ineffective due to lack of application and/or knowledge of the best practices that can deliver superior results (Cook & Odom, 2013). Furthermore, Cook and Odom underscored that EBP research must meet specific standards in order to be credible sources of EBP. These standards should attain to a number of dimensions, such as research design, methodological quality, and quantity (Cook, Tankersley, & Landrum, 2009). This research must be hinged on manifold, high-quality, experimental or quasi-experimental studies (such as single-case or correlational research) that show that a certain practice has a significant effect on learner outcomes (Horner et al., 2005; Odom et al., 2005; Thompson et al., 2005). Hence, not all studies can claim that they can contribute to EBPs.

**Review of Literature on EBPs**

Several studies evaluated and determined the process of conducting studies for EBPs. Brackenbury, Burroughs, and Hewitt (2008) explored time, energy, and materials that EBP needs and the kinds of results that they can produce. They followed EBP principles from the American Speech-Hearing association and applied it to three treatment case studies. Brackenbury et al.

learned that searching for individual articles yielded more relevant results than searching for systematic reviews and the general results of these studies indicated that EBP is a critical element of effective and humane interventions, but determining the exact time, resources, and efforts that are required to produce EBPs can greatly vary across individuals, groups, and settings. Torres, Farley, and Cook (2012) reviewed EBP research. They discovered that practices can be described as part of EBP if they are based on quality group experimental or quasi-experimental studies and single-subject studies, while qualitative studies may not always prove that it can cause improvements in student outcomes (Torres et al., 2012). Cook and Odom (2013) described several articles on EBP design and implementation. They concluded that implementation science helped determine EBP issues in special education, especially concerning the research-to-practice gap, dissemination, development, state-level execution, and professional development (Cook & Odom, 2013; Simpson, 2005). Forness (2005) and Kretlow and Blatz (2011) agreed with Cook and Odom on the importance of sustainability of EBP and nature of valid evidence, but Forness also discussed the problems of overlapping emotional and behavioral problems and special education challenges (i.e. racial disproportionality) that can impact the development of EBP in special education. In another article, Cook, Tankersley, and Landrum (2009) examined the determination of EBP in psychology and general education which can be applied to special education. They proposed quality indicators (QIs), which when used on research resulted in high-quality design and results for EBP (Cook et al., 2009; "Task force on quality indicators for research informing evidence-based practice in special education," 2003). Odom et al. (2005) confirmed the significance of quality indicators in assessing and collecting evidence for EBPs. These studies provided quality indicators and guidelines that can help teachers determine if they are using EBPs and also to help their own studies that can yield EBPs.

The review proceeds to literature on EBPs for students with dyslexia and other reading problems. Justice (2006) studied evidence-based viewpoint on response to intervention (RTI) for school communities, so that they could reduce reading difficulties among students. She also studied the role of speech language pathologists (SLPs) for these measures. Justice defined RTI as an educational rule and practice that is based on studies that emphasize how schools can organize their resources more to produce multi-tiered reading interventions that could diminish risks for reading disability. Findings showed that proactive multilevel approaches that SLPs helped design and implement can improve reading outcomes for students (Justice, 2006). The initiative in developing organized and sustainable activities can cut back the number of students who would later need special education services in reading and connected areas (Justice, 2006). Forness (2005) stressed that EBPs must also address problems in special education, specifically concerning racial disparity and comorbidity of learning disorders and emotional disorders. Emotional and learning disabilities can intensify reading problems and result in questionable or ineffective applications of EBP (Forness, 2005; Niesyn, 2009).

Several quasi-experimental studies showed how different approaches improved reading outcomes for students with reading disability. Lovett (1994) assessed two types of word identification training to encourage transfer of learning by children with dyslexia. Her sampling included 62 children who were randomly assigned to one of the training programs or to a study skills control program: one of the programs developed phonological analysis and blending skills and gave specific instruction of letter–sound correspondences, while the other program emphasized the attainment, use, and supervision of four metacognitive decoding strategies. Lovett learned that both training models were correlated with meaningful positive effects and transfers of knowledge, as well as general achievement outcomes. Reynolds and Nicolson (2007)

conducted a follow-up study in an exercise-based intervention for children with reading difficulties. Their initial study investigated the results of a 6-month, home-based exercise program for children with dyslexia, where results showed that they posted greater improvements on cognitive and motor skills than the control group (Reynolds & Nicolson, 2007). Critics asserted that the improvements came from outside forces, such as Hawthorne effect, but the follow-up study proved otherwise (Reynolds & Nicolson, 2007).

In the follow-up, after 18 months, children continued to have important gains in motor skill, speech/language fluency, phonology, and working memory (Reynolds & Nicolson, 2007). Students with or without dyslexia benefitted, such as through reduced problem of inattention and maintained levels in speeded tests of reading and spelling, but there was a noteworthy enhancement in (age-adjusted) reading (NFER) (Reynolds & Nicolson, 2007). These findings indicated that the effects of the research were long-lasting and not attributable to external forces as critics claimed (Reynolds & Nicolson, 2007). EBP, nevertheless, required further testing of these approaches for their methodological rigor and appropriateness for specific groups (Cook & Odom, 2013; Odom et al., 2005; Thompson et al., 2005).

Single-case studies showed other effective teaching practices for reading and related subjects that are based on scientific research. Elkind, Cohen, and Murray (1993) tested the usefulness of computer readers for dyslexic students. Their sampling included 28 middle school students with dyslexia diagnosis. Elkind et al. used a computer-based reading structure for reading literature that lasted for 30 minutes a day for a semester. Results were promising because the system compensated learning for participants, where 70% of them were able to enhance reading comprehension and had one or more grade level of improvement (Elkind et al., 1993). Around 40% of students exhibited large improvement of two to five grade levels (Elkind et al.,

1993). Not all students had positive outcomes, wherein 14% showed lower comprehension and the potential source of degradation was kinesthetic-motor weaknesses (Elkind et al., 1993). Other students attested that they had improved their reading speed, attention span, and reading endurance when using the system (Elkind et al., 1993). Elkind et al. concluded that computers are useful sources of compensatory support that can allow students with dyslexia to conduct reading-related assignments more effectively. Griffiths and Stuart (2013) explored the role of giving a 'template' to inform practice at Wave 2, which refers to additional measures that help children to work at age-related expectations or beyond. Wave 3 interventions are designed for children whose learning conditions are frequently severe and who necessitate a program customized to their individual needs, taught on a one-to-one basis and offered continuing support for teaching (Griffiths & Stuart, 2013). Griffiths and Stuart used three theoretically-inspired single-case studies from developmental theory. They stressed that processing structures of skilled performance are determined as a basis of evidence in giving meaningful insights into the kind of assessment required for designing customized interventions at individual levels for students with severe dyslexia/reading disabilities.

Snowling and Hulme (2012) reviewed studies that explore individual differences in reading disorders and different effective interventions that can enhance reading and language competencies. They determined that effective interventions pertained to addressing decoding deficits, which is present in students with dyslexia, as well as phonological awareness and reading practice to improve emerging skills (Snowling & Hulme, 2012). In another study, Snowling and Hulme examined evidence-based interventions for students with reading and language difficulties. They learned that a multi-tiered approach to intervention, where there is inclusion of high-quality mainstream teaching all the way to specific interventions, is effective

and efficient (Snowling & Hulme, 2012). In addition, oral language skills approaches (i.e. grammar and vocabulary) that integrate vocabulary development and listening comprehension can be as successful or even more effective as an intervention for reading comprehension problems as text-based techniques (Snowling & Hulme, 2012). RTI can be used to monitor the effects of interventions (Justice, 2006; Snowling & Hulme, 2012). When results are poor, educators must study reoccurring problems that affect progress, thereby indicating a possible need for separate treatments (Griffiths & Stuart, 2013; Snowling & Hulme, 2012).

**Different Evidence-Based Practices**

Evidence-Based Practice is significant to special education because it provides new ways of designing, implementing, and assessing teaching practices according to scientific research results (Cook, Cook, & Landrum, 2013; Torres, Farley, & Cook, 2012). According to the TeachingLD website, the best practices of EBP are Cognitive Strategy Instruction, Vocabulary Instruction, Self-Regulated Strategy Development, Functional Behavioral Assessment, Fluency Instruction, Phonics Instruction, Graphic Organizers, Reading Comprehension Instruction, Phonological Awareness, Class-wide Peer Tutoring, Mnemonic Instruction, Formative Evaluation, Direct Instruction, and The Alert Series. The same website asserted that educators should take caution in using these strategies: Cooperative Learning, Social Skills Instruction, Reading Recovery, Co-Teaching, and High-Stakes Assessment.

**Cognitive Strategy Instruction**

Cognitive strategy instruction (CSI) is an explicit way of teaching students particular and general cognitive approaches to enhance learning and performance through assisting information processing, and so its main goal is to help students how to learn, instead of mastering subject content (Jitendra, Burgess, & Gajria, 2011; Krawec & Montague, 2012). Some CSI strategies

are “text structure, main idea identification, summarization, self-questioning, cognitive mapping, and reciprocal teaching” (Jitendra et al., 2011). Literature reviews showed different outcomes in the effectiveness of CSI in helping children with learning disability (LDs), wherein Jitendra et al. (2011) concluded from their study that only group design studies met the criteria for EBP because single-subject designs suffered from problems in describing sampling/setting, and issues with baseline, independent variable, external validity, internal validity, and social validity. While Gajria et al. (2007) determined from their review that instructional approaches offer evidence that expository text comprehension instruction for students with LDs resulted in positive and significant impacts. Montague and Dietz (2009), on the contrary, found out that several single-subject and group-design studies did not pass criteria for EBP when it came to assisting students with LDs who wanted to enhance mathematical problem-solving skills.

**Vocabulary Instruction**

Vocabulary instruction pertains to explicit instructional strategies that aim to expand students’ vocabulary through helping them understand not only the definition of words, but the relationships among words and the connections between word origin, structure, and meaning (Fore III, Boon, & Lowrie, 2007; Phillips, Foote, & Harper, 2008). Vocabulary instruction is an EBP because it supports vocabulary expansion through direct instruction (Fore III et al., 2007; Phillips et al., 2008). Fore III et al. showed from their cross-sectional group study that the concept model of vocabulary instruction resulted to improved numbers of vocabulary questions answered correctly compared to the definition/sentence writing model for high-school students with LDs, while Phillips et al. demonstrated from their research that various direct and indirect instruction methods improved vocabulary acquisition for selected K-12 students.

**Self-Regulated Strategy Development**

SRSD uses a recursive and adjustable structure of six stages that scaffold the learning process for students with different learning needs and levels (Graham & Harris, 1993; Santangelo et al., 2007). These stages are: (1) Developing background knowledge; (2) Discussing the purpose and steps of the strategy; (3) Modeling the strategy through "think aloud" processes, where the former integrates instructional materials and self-regulation (Mason et al., 2011); (4) Memorizing part, wherein students memorize the mnemonics strategy and the strategy's steps; (5) Learning how to determine goals, examining the progress of their writing outcomes, instructing themselves in using different strategies, and providing self-reinforcement for achieved goals (Mason et al., 2011); and (6) Implementing "independent performance" because students can already execute the strategy with little to no scaffolding from the teacher (Santangelo et al., 2007). SRSD is extensively considered as a theoretically and empirically-proven approach for both students with LDs and students with emotional and writing problems (Lane et al., 2008; Mason, Benedek-Wood, & Valasa, 2009; Santangelo, Harris, & Graham, 2008). Some SRSD examples are: POW + WWW what =2, how = 2; POW + C-SPACE; POW + TREE; STOP and DARE; Report writing; Plans; and PLAN & WRITE.

**Functional Behavioral Assessment**

Functional behavioral assessment (FBA) is a methodical method of collecting data to evaluate environmental variables that affect problem behaviors (Wasano, Borrero, & Kohn, 2009). Two indirect FBA measures are the Motivational Assessment Scale (MAS) and the Questions About Behavioral Function (QABF). FBA is an EBP because studies showed that it can help define and determine the extent and severity of behavioral problems, offer potential explanations for causes, and recommend interventions (Floyd, Phaneuf, & Wilczynski, 2005;

Wasano, Borrero, & Kohn, 2009). FBA requires further study, nevertheless, because Borgmeier and Horner (2006) showed from their cross-sectional study that there were limitations in using confidence ratings in determining precise from imprecise functional hypotheses, while Floyd et al. showed weaknesses in the measurement characteristics of FBA measures.

**Fluency Instruction**

Fluency instruction seeks to improve reading achievement through different methods (Schwanenflugel et al., 2009). Some examples of fluency instruction are repeated reading, contingent reinforcement, goal setting, feedback, and previewing (Morgan & Sideridis, 2006; Otaiba & Rivera, 2006). Fluency instruction is an EBP because studies indicated that it can have short-term and long-term effects on reading achievement (Otaiba & Rivera, 2006; Schwanenflugel et al., 2009). Otaiba and Rivera learned from several reviews that repeated reading built fluency, Stahl and Heubach (2005) demonstrated that reorganized reading program enhanced reading achievement for more than two years, while Schwanenflugel et al. showed that when Fluency-Oriented Reading Instruction (FORI) and wide reading were compared in terms of impacts on the fluency of second-grade students, wide reading had significant short-term effects on fluency, although in the long run, both methods improved children's reading comprehension.

**Reading Fluency**

The CLD defined reading fluency as the ability to read text easily, accurately and with the right emotion (Bryant, Engelhard, & Reetz, n.d.). Several research-based strategies for improving reading fluency are repeated reading, paired reading, tape-assisted reading, and chunking (Bryant, Engelhard, & Reetz, n.d.). Repeated Reading refers to re-reading of the text aloud several times until the target fluency is attained; Paired (Partner) Reading happens when two students read one after the other; Tape-assisted Reading makes use of reading the print with

a taped message; and Chunking happens when the teacher divides the text into groups or chunks to help students read them fluently (Bryant, Engelhard, & Reetz, n.d.; Meyer & Felton, 1999). Studies showed that reading fluency programs can improve fluency, recall and comprehension at varying levels and degrees (Meyer & Felton, 1999; Sindelar, Monda, & O'Shea, 1990). Sindelar et al. learned from their study on reading fluency and recall for students with and without learning disabilities (these students read at instructional or mastery levels) that repeated reading improved reading fluency and recall for elementary students regardless of learning disability, which Samuels (1997) confirmed in his literature review.

Other sources contextualized the gains from repeated reading and asserted its usefulness and limitations. The review of literature of Meyer and Felton (1999) showed that repeated reading improved reading speed and accuracy for elementary school students with disabilities, but at varying levels, Edmonds et al. (2009) asserted from their review of literature that the effects of repeated reading on fluency are mixed, whereas Boardman et al. (2008) asserted that according to literature, repeated reading is best for enhancing fluency on practiced words. Sutherland and Snyder (2007) showed from their study on middle school students with emotional and behavioral disorders (EBD) that they did not enjoy repeated reading, and a potential explanation is that they do not have the motivation needed to appreciate this approach. Sutherland and Snyder suggested peer tutoring and self-graphing for these groups of students. Boardman et al. recommended that repeated oral reading can help older readers when it is integrated with word-learning instruction, recurrent and wide-ranging introduction to newly learned words, and supervised reading practices.

ASHA advanced the position that speech-language pathologists (SLPs) can and must take a significant and direct responsibility in the improvement of literacy for children and youth with

communication disorders (Kamhi, 2003). SLPs can have more active roles in the prevention, recognition, assessment, intervention, monitoring, and follow-up processes (Kamhi, 2003). SLPs can particularly support the development of reading fluency among children, where fluency usually is the ability to read with pace, correctness, and proper expression (Kamhi, 2003). Reutzel (2009) agreed with Kamhi that reading fluency is an important aspect of language learning. Reutzel presented several effective and evidence-based ways for teachers and SLPs to facilitate fluency instruction and practice. Fluency-oriented reading instruction (FORI) is a set-up for giving a whole-class reading fluency lesson (Kuhn et al., 2010). Based on a FORI lesson, students read a chosen text orally and repeatedly for one week (Turner, 2010). Several reading and discussion activities are combined to enhance reading ability (Turner, 2010). Robertson (2009) provides several reading fluency approaches too, such as repeated oral reading, model fluent reading, sentence stress, and use of poetry and music.

**Phonics Instruction**

Phonics is an instructional approach that helps students to learn the logical relationship between letters and sounds, and how to make use of that system (the alphabetic principle) to read words (Mesmer & Griffith, 2005). Phonics instruction methods are EBPs because they are shown to be beneficial in assisting beginning readers in attaining better results in decoding, comprehension, and collateral skills than other methods (Hooks & Peach, 1993; Montgomery, 2008). Some of these methods are Visual Phonics, Char-L Intensive Phonics Program, and explicit, systematic phonics instruction (Hooks & Peach, 1993; Mesmer & Griffith, 2005; Montgomery, 2008). Montgomery interviewed Dave Krupke, a retired speech-language pathologist for the past four decades, who noted that Visual Phonics improved literacy skill acquisition and stability for a group of kindergarten students, while Hooks and Peach observed

that students enrolled in a Char-L Intensive Phonics Program enhanced their reading skills and word recognition.

**Graphic Organizers**

Graphic organizers (GOs) are visual and spatial devices that use lines, circles, and boxes to systematize information (Dexter & Hughes, 2011). GOs are EBPs because they have shown effects on learning core-content subjects, such as reading, science, social science, and mathematics (Dexter & Hughes, 2011; Ives, 2007).

The LDA summarized studies on graphic organizers. Comprehension gains can result from graphic organizers through accentuating text structures, like when using story maps (Onachukwu, Boon, Fore III, & Bender, 2007). Graphic organizers (GOs) also contributed to developments in comprehension, recall, and vocabulary learning (Ellis & Howard, 2007). Graphic organizers can be added to strategy instruction to improve its effectiveness (Gieselmann, 2008). Graphic organizers can also be used as part of planning tools for introducing prompts for goal setting and brainstorming, and organizing ideas to boost writing performance (Baker & Zigmond, 1995). Graphic organizers are further effective in showing text structures and prompting students to plan, systematize, write, edit and revise writings (Hall et al., 2013). GOs can also support content learning for elementary and secondary students, such as in learning concepts and facts in social studies and science (Hall et al., 2013; Knight et al., 2013; Zakas et al., 2013).

**Reading Comprehension Instruction**

Reading comprehension strategies are procedures that promote active, deliberate, and self-regulated reading (Calhoon, 2005). These strategies are EBPs because studies indicated that they can enhance reading comprehension for middle-school students with disabilities (Calhoon,

2005; Kim, Linan-Thompson, & Misquitta, 2012).

ASHA asserted that reading ability, particularly the skill of reading comprehension while reading in silence, can improve academic success and autonomy (Calhoon, 2005; Qualls, O'Brien, & Blood, 2003). For teachers who use augmentative and alternative communication (AAC), this ability can lead to the aforementioned benefits, while enhancing the ability for face-to-face communication and successful participation in asynchronous communication (Erickson, 2003). One of the methods of reading comprehension is silent reading comprehension (SRC) (Erickson, 2003). An effective SRC combines skills, learning, and processes through word identification (which concerns decoding and automatic word recognition), whole-text print processing (which uses several processes during silent reading of text that are linked to one another), and written language comprehension (which contains knowledge of written language text and world knowledge) (Erickson, 2003). For word identification, reading instruction for persons who use AAC must have a two-pronged concentration on automatic word identification and phonics or decoding skills (Erickson, 2003; Schlosser et al., 2012). These two skills must be combined to ensure the success of SRC, wherein readers can recognize the words and understand unfamiliar words (Erickson, 2003). Furthermore, SRC includes whole-text print processing that is composed of inner voice, eye movements, and projecting prosody (Erickson, 2003). Written language comprehension can be enhanced through reading or listening and activates two connected yet separate knowledge areas: knowledge of text structures and knowledge of the world (Rapp & Lipka, 2011). These knowledge areas must be systematically addressed in intervention and instruction to have effective SRC (Erickson, 2003).

One study showed the importance of showing the efficacy of teaching inferential language to young students with language delays (van Kleeck, Vander Woude, & Hammett,

2006). Inferencing can aid later stages of reading comprehension, and it is also critical to the text-level language competency of story comprehension (van Kleeck, 2007). In addition, inferencing helps children participate in other discussions that can improve reading comprehension and academic effectiveness (Nystrand, 2006). van Kleeck called these class discussions as "school talk" that allows students to not just understand the literal definition of words, but to make inferences and use prediction, explanation, and hypothesis formulation to gain deeper understandings about language.

The CLD offered reading comprehension strategies. Reading comprehension strategies are procedures that promote active, deliberate, and self-regulated reading (Calhoon, 2005). Some of these strategies are: Word level interventions, explicit instruction, peer tutoring, reciprocal teaching, graphic organizers, specific instruction, group work, increased time and frequency, and progress evaluation (Kosanovich, 2013; Perfetti, Landi, & Oakhill, 2005). Bryant et al. (1999) reviewed content-area reading instruction and learned that it can affect word identification, vocabulary, and comprehension, though they believe that to attain positive outcomes, these instructions should be incorporated "into the total school curriculum". Perfetti et al. (2005) agreed with the findings of Bryant et al., where they noted that based on research of the National Institute of Child Health and Human Development [NICHD] (2000) 205 out of 453 studies attained the methodological criteria that connected comprehension instruction and comprehension outcomes, while Boardman et al. (2008) asserted that comprehension monitoring strategies allow students to monitor their understanding as they read and to execute "fix-up" strategies when determining and resolving reading problems .

Boardman et al. (2008) mentioned studies that showed that giving explicit instruction on vocabulary improved vocabulary and reading comprehension, particularly for students with

disabilities (Bryant et al., 2003, Jitendra et al., 2004 as cited in Boardman et al.). Perfetti et al. (2005) asserted the role of active engagement in understanding the meaning of text to promote both understanding and positive attitudes towards learning for students in general. Edmonds et al. (2009) agreed with these studies that support reading comprehension instruction because their meta-analysis showed that students with reading problems and disabilities benefited from targeted reading intervention. The intervention boosted comprehension through comprehension strategies that merged multiple reading components, while some had word reading strategies (Edmonds et al., 2009).

**Phonological Awareness**

Phonological awareness is frequently defined as the ability to influence the individual phonemes of oral language (Elbro & Peterson, 2004, as cited in Wise et al., 2008). Studies showed that students with reading disabilities commonly have deficits in phonological awareness (Wise et al., 2010; Zourou et al., 2010). Studies showed that systematic and deliberate instructional methods that focus on phonological awareness improved reading and spelling skills for students with or without disabilities (Shamir, Korat, & Fellah, 2012; Zourou et al., 2010).

Gillon (2002) of ASHA focused on phonological awareness, which pertains to the precise understanding of a word's sound structure because this is significant to the competent decoding of printed words and the aptitude to create connections between sounds and letters when spelling. She stressed the role of SLPs in enhancing phonological awareness because they have knowledge and expertise in normal and disordered phonological development (Gillon, 2002). SLPs know and are constantly studying the structure of the speech-sound system- its development, connection to orthographic symbols, and promotion of awareness for speech-sound system (Gillon, 2002,). Gillon asserted that research supported the importance of phoneme-level

activities and using speech-to-print tasks (for instance, teaching the connection between sound in words and letters in words with letter blocks). She questioned the overemphasis on rhyme- and syllable-level tasks for school-aged children, when these skills can be acquired without intensive intervention (Gillon, 2002). She explained that for children with spoken-language impairment who also have noteworthy reading delay; skills at the phoneme level can be improved through having particular responses (Gillon, 2002). Some interventions are blending speech sounds together to figure out words and segmenting words into their individual sounds (Gillon, 2002).

**Class-wide Peer Tutoring**

Class-wide peer tutoring pertains to a set of instructional strategies in which students, who are trained and managed by their teachers, tutor other students who are falling behind their peers (Greenwood & Delquadri, 1995). The earliest and most extensively researched method is the class-wide peer tutoring (CWPT) approach that the Juniper Gardens Children's Project in Kansas City developed (Bowman-Perrott, 2009). CWPT is an EBP because studies showed that it was superior to other teacher-led methods in several content areas and effective for students with or without disabilities (Bowman-Perrott, 2009; Greenwood, Arreaga-Mayer, & Utley, 2001).

The CLD offered an overview on peer tutoring, wherein it pertains to a peer-facilitated strategy where a higher-performing student helps a lower-performing peer in understanding academic concepts and practices (Hott, & Walker, & Sahni, 2012). Some of the most commonly used peer tutoring practices are Classwide Peer Tutoring (CWPT), Cross-age Peer Tutoring, Peer Assisted Learning Strategies (PALS), Reciprocal Peer Tutoring (RPT), and Same-age Peer Tutoring (Harper and Maheady, 2007; Hott, & Walker, & Sahni, 2012; Kunsch, Jitendra, and Sood et al., 2007). Sutherland and Snyder (2007) showed from their cross-sectional study that

reciprocal peer tutoring and self-graphing enhanced both the classroom behavior and reading fluency of students with emotional and behavioral disorders (EBD), while Boardman et al. (2008) emphasized the benefits of peer tutoring and peer collaboration efforts to learning success in general and reading outcomes in particular.

Peer tutoring showed positive student outcomes for several subjects. Boardman et al. (2008) showed significant gains on fluency through peer tutoring, while Kunsch et al. (2007) learned from their literature review that peer-mediated approaches are moderately effective in enhancing mathematics performance, but these approaches benefitted at-risk students more than those with disabilities. Edmonds et al. (2009) reviewed several reading interventions and found that peer tutoring group has the highest positive outcomes for comprehension metrics. Fuchs, Fuchs, and Kazdan (1999) confirmed peer tutoring's effectiveness when they examined the effect of PALS on high-school students' (enrolled in remedial and special education classes) literacy and reading beliefs. Fuchs et al. noted that control and experimental groups had the same increased reading outcomes. Harper and Maheady (2007) learned from their review of several peer tutoring approaches that Classwide Student Tutoring Teams and parallel interventions enhanced students' perceptions of themselves and peers as competent learners, which helped improve academic outcomes. Harper and Maheady asserted, nevertheless, that these strategies are effective because they improve students' participation and engagement and facilitate easy feedback, attitudes and practices that can affect content outcomes.

**Mnemonic Instruction**

Mnemonic instruction integrates the arrangement of new information with explicit strategies for memorization (Scruggs et al., 2010). Some mnemonic strategies are the keyword method, the pegword method, and letter strategies (Scruggs et al., 2010). Studies showed that

mnemonic instruction helped grade school and high school students with mild disabilities (Scruggs et al., 2010), while Fontana,Scruggs, and Mastropieri (2007) stressed from their study that mnemonic instruction helped non-native speakers more than children with disabilities.

**Formative Evaluation**

Formative evaluation is the continuing gathering of information for purposes of evaluating the efficacy of instructional implementations and finding out if changes to the instruction are essential (Barrera & Liu, 2010). Several approaches to formative evaluation are Curriculum Based Assessment (CBA), Curriculum-Based Measurement (CBM), and Portfolio and Performance Assessment (PA). CBA and PA offer practical information for teachers in relation to changing instruction to advance student outcomes, although CBM, recently called General Outcomes Measures (GOMs), has more empirical basis for validity (Barrera & Liu, 2010; Watt, Therrien, & Kaldenberg, 2013).

**Direct Instruction**

Direct Instruction (DI) is a teacher-led approach to explicit instruction that focuses on instruction and curriculum design through interaction between students and teachers (Flores & Ganz, 2007; Magliaro, Lockee, & Burton, 2005). Studies showed that DI is effective in improving reading comprehension and skills (Flores & Ganz, 2007) and acquisitions of prepositions for students with intellectual disabilities (Hicks et al., 2011).

**The Alert Series**

TeachingLD (1999) is the product of a joint initiative of two sponsoring divisions- the Council for Exceptional Children—the Division for Learning Disabilities (DLD) and the Division for Research (DR). The initiative sought to provide apt and up to date judgments on emerging and established professional practices in the field. This can be seen as EBD if based on

systematic research and scientific evidence.

Suggested practices that must be used with caution are the following:

**Cooperative Learning**

Cooperative learning (CL) is an instructional method that employs small, heterogeneous groups of students who cooperate in attaining common learning goals (Fore III, Riser, & Boon, 2006). Though Fore et al. claimed that CL could enhance math and language skills, based on Slavin's (1997) studies, Deatline-Buchman and Jitendra noted from their study that it is not always effective in improving skills in writing argumentative skills for grade-four students with learning disabilities.

**Social Skills Instruction**

Social skills instruction pertains to the organized application of instructional procedures to help students develop social skills (Walton & Ingersoll, 2013). Because of lack of standardization in the design and implementation of social skills instruction, it cannot be defined as a standard instructional program (Shukla-Mehta, Miller, & Callahan, 2010). Some social skills instruction methods are "video modeling, developmental, peer-mediated, behavioral, and structured teaching" (Walton & Ingersoll, 2013). Walton and Ingersoll concluded from their review that social skills can be enhanced for adolescents and adults with autism through social skills instruction. Shukla-Mehta et al. agreed, specifically noting that video instruction improved social and communication skills for children with autism, although to establish video instruction as an evidence-based intervention, future researchers should concentrate on the following: (a) documenting the fidelity of intervention procedures, (b) analyzing the specific effects of VM vis-a-vis instructor behaviors, (c) developing a profile of participants based on behavioral characteristics to determine which strategy (VM, VSM, or PVM) would be more effective for

skills instruction, and (d) implementing video instruction with older children, adults, and individuals from diverse cultural and language groups (Shukla-Mehta et al., 2010).

**Reading Recovery**

Reading Recovery is an early literacy intervention that includes one-to-one tutoring for children who are the lowest level of performance in their class after a year of school reading instruction (Dunn, 2007). Studies showed that reading recovery works on the average, although not all the time (Mcdowall, 2008) and that it is effective in determining students with reading disabilities (Dunn, 2007) and for both "discontinued and not discontinued students on outcomes tailored to the program and standardized achievement measures" (D'Agostino & Murphy, 2004, p23).

**Co-Teaching**

Co-teaching pertains to a teaching method wherein a general instruction teacher teaches an inclusive classroom with a special education teacher (Hang & Rabren, 2009). These teachers are supposed to share responsibility in planning, delivering, and assessing instruction for their classes, although Scruggs, Mastropieri, and McDuffie (2007) learned unequal relations between co-teachers in their review of literature. Hang and Rabren noted improvements in students with LD's academic outcomes when co-teaching was present.

**High-Stakes Assessment**

High-stakes assessment aims to enhance educational outcomes through testing programs that seek to develop high academic standards, improve student achievement, enable equal opportunities in education, boost family involvement, and expand public support for schools (Christenson et al., 2007). Findings showed mixed results for the attainment of these goals, wherein Fletcher et al. (2006) discovered that high-stakes testing improved only the performance

of students with decoding problems, while Christenson et al. (2007) asserted from their study that “student characteristics, school performance indicators, and test performance indicators (including high-stakes assessments)” were more significant factors in producing grade advancement decisions for general education students than for special education students (p.686).

# Chapter 3

# METHODS

## Study Design

The study employed quantitative methods of research. Using descriptive research, the study focused on the 18 instructional strategies mentioned by the TeachingLD website. These teaching practices are categorized in two categories. The "Go for it" category which is proven by research for its effectiveness includes the following practices: (1) Cognitive Strategy Instruction, (2) Vocabulary Instruction, (3) Self-Regulated Strategy Development, (4) Functional Behavioral Assessment, (5) Fluency Instruction, (6) Phonics Instruction, (7) Graphic Organizers, (8) Reading Comprehension Instruction, (9) Phonological Awareness, (10) Class-wide Peer Tutoring, (11) Mnemonic Instruction, (12) Formative Evaluation and (13) Direct Instruction. The "Use Caution" category includes teaching practices that have shown incomplete, mixed or negative effectiveness. It includes the following practices: (1) Cooperative Learning, (2) Social Skills Instruction, (3) Reading Recovery, (4) Co-Teaching and (5) High-Stakes Assessment.

## Collection of Data

The study focused on two academic journals that are published by two organizations concerned with students with disabilities, *Intervention in School and Clinic* (ISC) and *Teaching Exceptional Children* (TEC). Articles were obtained online through the publisher websites in the last decade between 2003 and 2013.

## Brief Summary about the Journals

This section presents a brief summary of the two journals utilized as the sample of the study. The Summary focuses on the orientation and type of articles published.

*Intervention in School and Clinic* (ISC) is a practitioner-oriented journal that seeks to offer practical, research-based ideas to educators, teachers, and clinicians who work with

students with severe learning disabilities and emotional/behavioral problems (Hammill Institute on Disabilities, n.d.; SAGE, n.d.). ISC emphasizes providing strategies and techniques that can be practically implemented in school or clinic settings and that attend to the various needs of students with severe learning disabilities and emotional/behavioral problems (Hammill Institute on Disabilities, n.d.). These articles focus on curricular, instructional, social, behavioral, assessment, and vocational strategies and techniques and have direct application to the classroom setting (Hammill Institute on Disabilities, n.d.). ISC is published five times per year (Hammill Institute on Disabilities, n.d.).

*Teaching Exceptional Children* (TEC) is a journal specifically prepared for teachers, administrators, paraprofessionals, and other practitioners who work with children and youth with disabilities or who are gifted (Council for Exceptional Children CEC, n.d.). The main goal of TEC is to contribute to the professional development of practitioners and to offer useful information, resources, and tools for improving education and services for exceptional learners (CEC, n.d.). It seeks to publish articles that share ground-breaking and successful methods and materials using the most recent evidence-based practice for use in diverse educational programs and settings (CEC, n.d.). TEC features research-to-practice information and materials for classroom use and current issues in special education teaching and learning (CEC, n.d.). It is published six times per year and offers readers the latest data on instructional technologies, strategies, procedures, and techniques with applications to students with exceptionalities (CEC, n.d.). The focus of its practical content is on immediate application (CEC, n.d.).

**Criteria for Selection of Studies**

Articles in the two journals were examined for two elements: interventions target students with learning disabilities and if the intervention is one of the teaching practices recommended by teachiongLD.org in alert series or not.

For final inclusion in the synthesis, studies had to have been:

- published between 2003, and 2013.
- published in: (1) *Intervention in School and Clinic* (ISC) or (2) *Teaching Exceptional Children* (TEC).

**Coding Terms**

The following terms were used in the coding sheet (Appendix A), specifically for organizing and categorizing for study purpose (Scruggs & Mastropieri, 2012).

1) *Article Information.* It provides general information about the article.
    a. *Journal.* This code refers to the article published in TEC or ISC.
    b. *Author.* To list the first author's name who wrote or participate in writing the article.
    c. *Year.* This field is to write the year when the article was published.
    d. *Number of pages.* To determine the total number of pages an article occupies via pagination.
2) *Intervention.* It is an instructional strategy that is used to deliver content to students and improve student achievement. It includes terms like instructional strategy(ies) teaching method(s), teaching practices, educational methods, educational programs, and similar terms (Reichow et al., 2008)

I. *The "Go for it" category. It* is teaching practices proven by research for their effectiveness.

   a. *Cognitive Strategy Instruction (CSI).* Cognitive strategy instruction (CSI) is an explicit way of teaching students particular and general cognitive approaches to enhance learning and performance through assisting information processing, and so, its main goal is to help students learn, instead of mastering subject content (Jitendra, Burgess, & Gajria, 2011; Krawec & Montague, 2012).

   b. *Vocabulary Instruction (VI).* It includes all strategies that aim to build student vocabulary. Any strategy used that aims to build students' vocabulary will include in this code. (Fore III, Boon, & Lowrie, 2007; Phillips, Foote, & Harper, 2008).

   c. *Self-Regulated Strategy Development (SRSD).* This code for SRSD to mark for studies utilize this strategy. SRSD uses a recursive and adjustable structure of six stages that scaffold the learning process for students with different learning needs and levels (Graham & Harris, 1993; Santangelo et al., 2007).

   d. *Functional Behavioral Assessment (FBA).* Functional behavioral assessment (FBA) is a methodical method of collecting data to evaluate environmental variables that affect problem behaviors (Wasano, Borrero, & Kohn, 2009).

   e. *Fluency Instruction (FI).* Fluency instruction seeks to improve reading achievement through different methods (Schwanenflugel et al., 2009). Some examples of fluency instruction are repeated reading, contingent

reinforcement; goal setting, feedback, and previewing (Morgan & Sideridis, 2006; Otaiba & Rivera, 2006).

f. *Phonics Instruction (PHI).* Phonics is an instructional approach that helps students to learn the logical relationship between letters and sounds, and how to make use of that system (the alphabetic principle) to read words (Mesmer & Griffith, 2005). Phonics instruction methods are EBPs because they are shown to be beneficial in assisting beginning readers in attaining better results in decoding, comprehension, and collateral skills than other methods (Hooks & Peach, 1993; Montgomery, 2008).

g. *Graphic Organizers (GOs).* Graphic organizers (GOs) are visual and spatial devices that use lines, circles, and boxes like story map to systematize information (Dexter & Hughes, 2011).

h. *Reading Comprehension Instruction (RCI).* Reading comprehension strategies are procedures that promote active, deliberate, and self-regulated reading (Calhoon, 2005).

i. *Phonological Awareness (PHA).* Phonological awareness is frequently defined as the ability to influence the individual phonemes of oral language, Letter-sound relationship (Elbro & Peterson, 2004, as cited in Wise et al., 2008).

j. *Class-wide Peer Tutoring (CWPT).* Class-wide peer tutoring pertains to a set of instructional strategies in which students, who are trained and managed by their teachers tutor other students who are falling behind their peers (Greenwood & Delquadri, 1995).

k. *Mnemonic Instruction (MI).* Mnemonic instruction integrates the arrangement of new information with explicit strategies for memorization (Scruggs et al., 2010).

l. *Formative Evaluation (FE).* Formative evaluation is the continuing gathering of information for purposes of evaluating the efficacy of instructional implementations and finding out if changes to the instruction are essential (Barrera & Liu, 2010).

m. *Direct Instruction (DI).* Direct Instruction is a teacher-led approach to explicit instruction that focuses on instruction and curriculum design through interaction between students and teachers (Flores & Ganz, 2007; Magliaro, Lockee, & Burton, 2005).

II. *The "Use Caution" category.* It includes teaching practices that their research have incomplete, mixed or negative effectiveness.

a. *Cooperative Learning (CL).* Cooperative learning is an instructional method that employs small, heterogeneous groups of students who cooperate in attaining common learning goals (Fore III, Riser, & Boon, 2006).

b. *Social Skills Instruction (SSs).* Social skills instruction pertains to the organized application of instructional procedures to help students develop social skills (Walton & Ingersoll, 2013).

c. *Reading Recovery (RR).* Reading Recovery is an early literacy intervention that includes one-to-one tutoring for children who are the lowest level of performance in their class after a year of school reading instruction (Dunn, 2007).

d. *Co-Teaching (COT).* Co-teaching pertains to a teaching method wherein a general instruction teacher teaches an inclusive classroom with a special education teacher (Hang & Rabren, 2009).

e. *High-Stakes Assessment (HAS).* High-stakes assessment aim to enhance educational outcomes through testing programs that seek to develop high academic standards, improve student achievement, enable equal opportunities in education, boost family involvement, and expand public support for schools (Christenson et al., 2007).

III. *Other.* Teaching methods implemented rather than the previous 18 methods.

3) *Grade Level.* This category is for coding participants' grade levels as mentioned by articles.

a. *Preschool (K).* Instructional practice targets students or participants in kindergarten or preschool in general.

b. *Elementary (E).* Participants are in elementary level.

c. *Middle school (M).* Article is about students in junior high or middle (intermediate) school

d. *Secondry school (S).* Study services students in high (secondary) school.

e. *Post-secondary (P).* **S**tudy targets students rather than PreK – 12, like higher education students or others.

f. *Multi (M).* Article provides intervention or guidelines for all general schools.

g. *Not mention (N).* The article does not mention the school-aged children that services.

h. *Others (O).* Articles concerns on subject like laws, professional development and so on.

4) *Disability.* It serves to determine the kind of disability intervention target to students who have it.

a. *Learning disabilities (LD).* This code for teaching practices mentioned in the article for students labeled with learning disabilities.

*Learning disabilities* refers to students have difficulty in reading, writing, thinking, and other learning aspects, and it can pertain to specific learning disabilities, such as dyslexia, dysgraphia and dyscalculia.

b. *Autism (ASD).* Interventions directed toward students with autism**.**

Autism includes autism spectrum disorder. Autism Spectrum Disorders (ASD) is a cluster of three associated developmental disorders that demonstrate specific impairment in three particular functioning areas: (a) social interaction, (b) communication, and (c) several kinds of interests and behavior (American Psychiatric Association, 2000; Smith & Tyler, 2010).

c. *Emotional disturbance (ED).* In this cell, I will record the teaching practices designate for students with emotional disturbance. Emotional disturbance means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (a) An inability to learn that cannot be explained by intellectual, sensory, or health factors. (b) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers. (c) Inappropriate types of behavior or feelings under normal circumstances. (d) A general pervasive mood

of unhappiness or depression. (e) A tendency to develop physical symptoms or fears associated with personal or school problems (NCLB, 20 U.S.C 7801 § 9101[37]).

d. *Other.* They might have other disabilities and will be mentioned like, deafness, blindness, or intellectual disability.

5) *Setting.* It is where the intervention took place, such as in school, home, clinic, in more than one setting, or other.

   a. *School (S).* The intervention took place in school, like in a classroom or resource room, whether the school is public or private.

   b. *Home (H).* Instructional practice took place in a student's home.

   c. *Clinic (C).* Instructional practice took place in a clinic rather than in school or home.

   d. *Other.* This code refers to list where the intervention took place if did not happen in a school, home or clinic.

6) *Subject.* Subject (content area) refers to a defined domain of knowledge and skill in an academic program. The most common subjects in public schools are English (or English language arts), mathematics, science, and social studies (or history and civics) (Great Schools, 2013).

   a. *Reading (R).* Intervention discussed in the article designed to improve students' reading skills for identifying of written or printed words or the process of identifying and understanding the meaning of the characters and words in written or printed material.

b. *Math (M).* The strategy mentioned in the article aims to improve students' skill who have math difficulty, not learning disabilities.

c. *Science (S).* It pertains to knowledge in science and how interventions can improve it

d. *Language Art (LA).* The article discussed a teaching practice that aims to improve students' skills to use written and oral language.

e. *Social Skills (SSs).* Instructional strategies refer to improving socialization and interaction skills of students.

f. *Others.* This code refers to other content area mentioned in the article rather than the five content areas mentioned above.

7) *Images.* This term can refer to any picture, photo, clip art, sign, within the article.

a. *Number of relevant images (RE).* They are the pictures that support the article, like an image of technology used in the study, and so forth.

b. *Number of non-relevant images (IR).* Images that seemed to be added by publisher than the author and do not support the article.

## Inter-rater Reliability

An Independent second researcher coded a third of the articles to determine the extent to which she agreed with what had been rated by the researcher and to establish reliability of the study inclusion methods. When there was a disagreement, the study reviewed again.

## Analysis

In this section, descriptive information is provided for the type, rate, and quality of interventions. Descriptive analyses were conducted using SPSS software. Then, rate, type, and

quality of intervention articles were compared across years. In addition, intervention settings were compared to rate the most effective setting.

# Chapter 4

# RESULTS

## Introduction

This chapter presents the methods used in the study and findings. This study employed synthesis with a qualitative approach. Meta-synthesis is a form of systematic review of research that seeks to summarize learning from previous studies, using a specific research selection and quality criteria, in order to contribute to knowledge on a specific phenomenon (Sell et al., 2012; Poggenpoel & Myburgh, 2009). Kahn et al. (2003) defined a systematic review as consisting of a clearly-designed research question, identification of related studies, appraisal of quality, and summarization of evidence through an unambiguous methodology (also in Barnett-Page & Thomas, 2009). Bethel and Bernard (2010) explained the meaning of synthesis in the systematic review, where research synthesis pertains to the process by which two or more empirical studies are evaluated with the goal of summarizing evidence from answers to a specific question, thereby aggregating research that works and drawing pertinent conclusions from combined research evidence.

Meta-synthesis is not the same as meta-analysis because meta-synthesis seeks to merge themes and insights obtained from individual qualitative research, to produce higher order synthesis that supports extensive understandings of the whole body of research, while continuing to value the veracity of individual studies (Scruggs, Mastropieri, & Mcduffie, 2007). Meta-synthesis is also different from a systematic review because a systematic review is a valid technique of comparing quantitative research and follows well-designated steps, which include statistical analysis of the collected outcomes of studies (Walsh & Downe, 2005; Weed, 2005).

This statistical analysis is more precisely called meta-analysis, though some scholars differentiate or use meta-analysis as similar to a systematic review (Walsh & Downe, 2005).

The purpose of this qualitative research synthesis was to identify and analyze studies that had been published in the two special education journals, wherein these studies were conducted on students with learning disabilities. *Learning disability* is defined according to the Individuals with Disabilities Education Act (IDEA) 2004. The methodology was presented in the following paragraphs. This study used research synthesis with a qualitative meta-analytic process, so that analytical technique is employed to examine the relevant scope of studies and their content (Walsh & Downe, 2005). The concern for framing the meta-synthesis is central since, as in meta-analytic techniques, this eventually shapes the manageability of the research, and defines the transferability of the research results (Walsh & Downe, 2005).

The research questions were as follows:

1. What types of articles are published in prominent practitioner journals that can assist teachers working with students who have learning disabilities?
2. What are the characteristics of published intervention literature for students with learning disabilities?

## Sample

The study examined issues published in two selected peer-reviewed journals, *Teaching Exceptional Children* (TEC) and *Intervention in School and Clinic* (ISC), in the last decade from 2003 to 2013. These two journals were selected due to their high circulation rates, popularity, and their impact on the field of special education. After determining the boundaries of meta-synthesis, studies were located (DeCoster, 2009).

The problems that restrain primary researchers, such as small and homogeneous samples, inadequate time and money for creating constructs that are relevant to research gaps, are less prevalent for synthesists (Cooper & Hedges, 2009). They can take advantage of the variety in methods that were done naturally for different primary studies (Cooper & Hedges, 2009). The heterogeneity of methods for diverse studies may allow tests of theoretical hypotheses regarding the moderators and mediators of connections that have never been done in single primary studies (Cooper & Hedges, 2009). Conclusions can then be attained regarding the population and the ecological soundness of connections among variables that were discovered in past primary research may also attain further attention in syntheses (Cooper & Hedges, 2009; Barnett-Page & Thomas, 2009).

## Procedures

For the purpose of downloading and saving articles, a designated hierarchy folder contained two main folders that were made, one for TEC and another for ISC. Each folder held 13 folders for each year. Each year's folder had two folders for volumes that were numbered according to their succession in the journal. For TEC, the first volume had four folders for its issues, while the second volume had two folders for its issues. For ISC, the first volume had three folders for its issues, while the second volume had two folders for its issues. Each article in the issues obtained its sequence number as they appeared in the journal.

All articles were examined using electronic pdf files. *Exceptional Children Journal* issues were collected online from the Council for Exceptional children website, CEC.Org. Each article was saved in its proper folder under the right year, volume number and issue number with a sequence number. *Intervention in School and Clinic* issues were downloaded from the publisher website Sage.Com. Each article downloaded was placed in the folder corresponding to its year,

volume and issue, similar to the organization of the TEC articles. Downloaded files were saved in the computer and Dropbox. Figure 1 shows the organization method of folders.

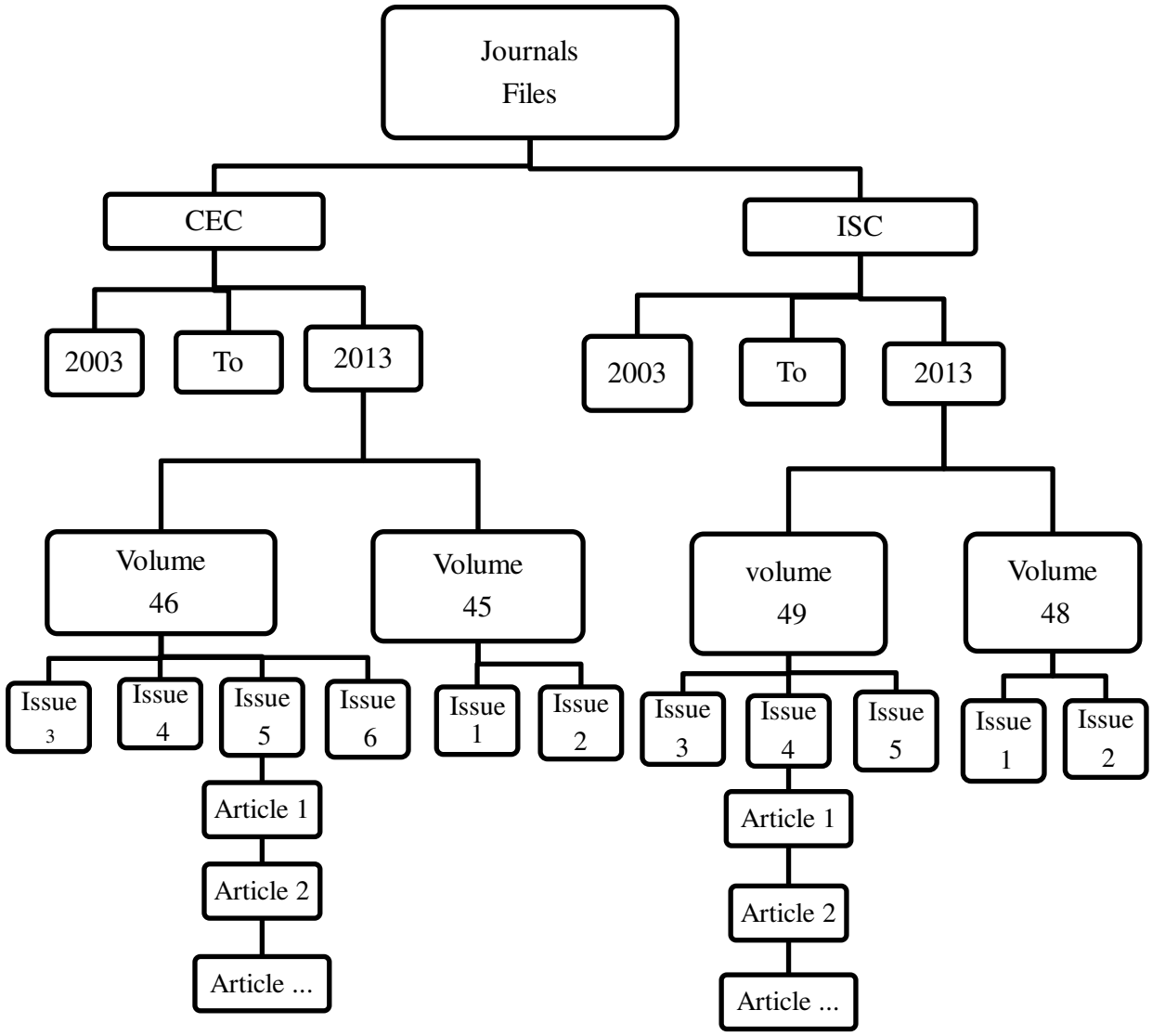


*Figure 1.* Organization Method of Folders

**Data**

The synthesis examined 1030 articles published in both journals. TEC journal contained 11 volumes (35-46), 66 issues and 534 articles in the timeframe 2003-2013. Each year had two volumes and six issues. 2003 year had 53 articles, 2004 included 50, 2005 published 46, 2006

produced 56, 2007 composed of 55, 2008 consisted of 54, 2009 had 49, 2010 included 45, 2011 had 38, 2012 published 44 and 2013 had 44.

Intervention in School and Clinic included 11 volumes (38-49), 50 issues and 496 articles. Each year has two volumes and five issues. 2003 year published 41 articles, 2004 included 43, 2005 contained 64, 2006 posted 52, 2007 issues 46, 2008 included 48, 2009 produced 44, 2010 generated 43, 2011 comprised of 42, 2012 consisted of 41 and 2013 contained 43.

For both journals, the total number of articles was 1030 that comprised of 7116 pages. The median of article's pages was 6.9, approximately seven pages per article. Table 1 provides an illustration of these numbers.

Table 1.
*Numbers of Articles per Year for TEC and ISC*

| Year | TEC | ISC | Total |
|---|---|---|---|
| 2003 | 53 | 41 | 94 |
| 2004 | 50 | 43 | 93 |
| 2005 | 46 | 64 | 110 |
| 2006 | 56 | 52 | 108 |
| 2007 | 55 | 46 | 101 |
| 2008 | 54 | 48 | 102 |
| 2009 | 49 | 44 | 93 |
| 2010 | 45 | 43 | 88 |
| 2011 | 38 | 42 | 80 |
| 2012 | 44 | 41 | 85 |
| 2013 | 44 | 43 | 87 |
| Total | 534 | 496 | 1030 |

## Treatment of Data

Coding procedures were generated after the conduct of initial reading and brief exploration of a number of articles (Sell et al., 2012). Coding their characteristics would help

identify the moderator variables (DeCoster, 2009). The coder worked independently, with only intermittent meeting with the advisor to fix or check ambiguities in the coding scheme (DeCoster, 2009). Furthermore, a second coder was employed in the analysis. A second coder allowed for checking the reliability of coding of moderators and coding system (DeCoster, 2009).

A coding instrument was developed to code data from all the articles. This format integrated checklist and writing techniques. All articles were included. Each single article was read and coded. Articles were examined using nine categories and different variables. (Appendix A shows the developmental coding instrument).

Category (A) included the article's identification information (first author's last name, publication outlet, year, volume, issue, and number of pages). Category (B) consisted of the intervention used (article is about intervention or not). Category (C) comprised of the disability (Learning Disabilities, Autism Spectrum Disorders, Emotional Disturbance, and Other health impairments). Category (D) showed the subject involved the study (reading, mathematics, science, language art, social skills). Category (E) was made for the coding of grade level (preschool, elementary, middle, secondary, and postsecondary).

Category (F) included the setting (school, home, and clinic). Category (G) composed the images used (counted under two sections; relevant or irrelevant). Category (H) referred to intervention types ( subgroup (1) included Cognitive Strategy Instruction, Vocabulary Instruction, Self-Regulated Strategy Development, Functional Behavioral Assessment, Fluency Instruction, Phonics Instruction, Graphic Organizers, Reading Comprehension Instruction, Phonological Awareness, Class-wide Peer Tutoring, Mnemonic Instruction, Formative

Evaluation and Direct Instruction and subgroup (2) consisted of Cooperative Learning, Social Skills Instruction, Reading Recovery, Co-Teaching, and High-Stakes Assessment).

Category (I) included other category types not included in the aforementioned categories (where articles that did not have one of the 18 interventions were classified in general as (1) strategy types, (2) legalization types, (3) teacher types, (4) students types, (5) research types, (6) other- it included introduction, spotlights, book reviews and others).

Each category's subgroup was given a number to be used in the coding process. For example, setting category was divided into five subgroups, wherein the school setting was assigned number 1, home 2, clinic 3, others 4 and those settings that had no applicable category was provided the subgroup zero.

Images were coded in two categories. Relevant images which were related to the subject and added information to the reader (e.g. images that illustrate ideas, show technology items, steps to use software, and other purposes). Irrelevant images were perceived as occupying space uselessly without giving any illustrative support for the reader (i.e. pictures of a student, building, nature, clip arts, and so on). The author did not count images at the references pages, and small images that were around 1 inch, such as icons and signs. When coding was completed, data were analyzed electronically using SPSS Statistics Desktop Software, version 22.0.0.

## Inter-rater reliability

A university professor with 15 years experience examined 30% of articles. The initial reliability coefficient showed 97%. All discrepancies were resolved to 100% agreement (Creswell, 2012). The inter-rater reliability was calculated by the total number of agreements divided by the total number of agreements + disagreements * 100 (Alberto & Troutman, 2012).

## Statistical Analysis

The information summarized in Table 2 indicates there were 1030 articles from both journals that read and coded for synthesis. All articles were from two journals, *Teaching Exceptional Children* (TEC) and *Intervention in School and Clinic* (ISC).

Table 2 shows the results of the number of articles in each journal. There were 534 (51.8%) articles from (TEC) journal and 469 (48.2%) articles from (ISC) journal.

Table 2
*Journals' Articles*

| Journal | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Teaching Exceptional Children | 534 | 51.8 | 51.8 | 51.8 |
| Intervention in School an Clinic | 496 | 48.2 | 48.2 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

## Intervention

The result in Table 3 shows 562 (54.6%) articles did not share any intervention directly. Wherein there were 468 (45.4%), articles had intervention.

Table 3
*Does the Article Share an Intervention?*

| Intervention | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| No | 562 | 54.6 | 54.6 | 54.6 |
| Yes | 468 | 45.4 | 45.4 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

**Grade Level**

Elementary studies were published more than any others grade levels interventions. They were published 277 (26.9%) times, followed by 201(19.4%) articles did not mention the grade level, followed by 136 (13.2%)articles for high school students, followed by 104 (10.1%) articles for more than one grade level, followed by middle school intervention 46 (4.5%) times, followed by preschool intervention 34 (3.3%) times. Articles for post-secondary published 16 (1.6%) times. There were 216 (21%) articles not applicable as they dealt with general stuff about special education like policy, laws, special education in another country, interviews and so on. Table 4 shows findings about grade level.

Table 4
*Number of Articles by Grade Level*

| Grade Level | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not Applicable | 216 | 21.0 | 21.0 | 21.0 |
| PreSchool | 34 | 3.3 | 3.3 | 24.3 |
| Elementary | 277 | 26.9 | 26.9 | 51.2 |
| Middle | 46 | 4.5 | 4.5 | 55.6 |
| High | 136 | 13.2 | 13.2 | 68.8 |
| PostSecondary | 16 | 1.6 | 1.6 | 70.4 |
| Multi Grade Level | 104 | 10.1 | 10.1 | 80.5 |
| Not Mention | 201 | 19.4 | 19.4 | 99.9 |
| Total | 1030 | 100.0 | 100.0 | |

**Disability**

Table 5 shows findings about disability. Articles pertaining only to Learning Disabilities were 148 (14.4%) articles. Approximately 17.4% of articles (n = 179) involved students with learning disabilities receiving services within the general education setting. Autism Spectrum disorders mentioned 81 (7.9%) times. 43 (4.2%) articles were about emotional disturbance. Five

(0.5%) articles were about Other Health Impairment. Other disabilities rather than the previous five disabilities were mentioned 204 (19.8%) times. Articles did not mention the types of disability were 144 (14%). Articles' theme that were not disabilities were 226 (21.9%).

Table 5
*Disability*

| Disability | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not Mentioned | 226 | 21.9 | 21.9 | 21.9 |
| Learning Disability | 148 | 14.4 | 14.4 | 36.3 |
| Learning Disability and other Disability | 179 | 17.4 | 17.4 | 53.7 |
| ASD | 81 | 7.9 | 7.9 | 61.6 |
| EBD | 43 | 4.2 | 4.2 | 65.7 |
| OHI | 5 | .5 | .5 | 66.2 |
| Other | 204 | 19.8 | 19.8 | 86.0 |
| All students | 144 | 14.0 | 14.0 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

**Setting**

The majority of the articles were school-based interventions (N = 858), followed by "other category" which includes setting like community, university or program's location 20 times and six times combined with school, followed by home one time and combined with school three times and finally clinic used two times. One hundred forty-nine articles did not mention setting or not applicable. The school setting is not limited to classroom but include all school settings like resource room, libraries, lunchroom, and playground. Table 6 summarizes the results.

Table 6
*Target Setting*

| Setting | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not Applicable | 149 | 14.5 | 14.5 | 14.5 |
| School | 858 | 83.3 | 83.3 | 97.8 |
| Home | 1 | .1 | .1 | 97.9 |
| Clinic | 2 | .2 | .2 | 98.1 |
| Other | 20 | 1.9 | 1.9 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

**Images**

Images were classified in two categories as relevant that support the article or irrelevant that did not support the article.

1- Images that Support the Article

Table 7 shows the frequency of images that support the content of the article. The articles that did not contain any images were 844 (81.9%). Articles that contained only one image were 58 (8.3%). Articles with two images were 39 (3.8), articles that had three images were 28 (2.7%). There were 28 (2.8%) articles with three images. Twelve articles illustrated content with four images (1.2%), eight articles with five images (0.8%). Two articles included six (0.2%) images, six articles had seven images (0.6%), three articles had eight (0.3%) images, one (0.1%) article had 11(0.1) images, one (0.1) article had 12 images and one (0.1) article had 13 images.

Table 7
*Images that Support the Article*

| # of Images | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| 0 | 844 | 81.9 | 81.9 | 81.9 |
| 1 | 85 | 8.3 | 8.3 | 90.2 |
| 2 | 39 | 3.8 | 3.8 | 94.0 |
| 3 | 28 | 2.7 | 2.7 | 96.7 |
| 4 | 12 | 1.2 | 1.2 | 97.9 |
| 5 | 8 | .8 | .8 | 98.6 |
| 6 | 2 | .2 | .2 | 98.8 |
| 7 | 6 | .6 | .6 | 99.4 |
| 8 | 3 | .3 | .3 | 99.7 |
| 11 | 1 | .1 | .1 | 99.8 |
| 12 | 1 | .1 | .1 | 99.9 |
| 13 | 1 | .1 | .1 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

2- Images that do not `support article

Unsupportive images include image such as students, buildings, nature, and others. They sometimes related to topic but did not illustrate or add further information to the content. They varied by size. They seem added by editors rather than authors to fill in a space.

Table 8 illustrates the frequency of articles and their irrelevant images. One hundred sixty- three (15.8) articles did not have any images. Five hundred fifty-nine articles contained (54.3%) an irrelevant image. One hundred eighty-four (17.9%) articles with two irrelevant images, 64 (6.2%) articles had three irrelevant images, 28 (2.7%) articles with four irrelevant images, six (0.6%) articles had six irrelevant images, seven (0.8%) articles had eight irrelevant images, eight (0.8%) articles had eight irrelevant images and two (0.2%) articles had nine irrelevant images.

Table 8
*Images that Do Not Support Article*

| # of Images | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| 0 | 163 | 15.8 | 15.8 | 15.8 |
| 1 | 559 | 54.3 | 54.3 | 70.1 |
| 2 | 184 | 17.9 | 17.9 | 88.0 |
| 3 | 64 | 6.2 | 6.2 | 94.2 |
| 4 | 28 | 2.7 | 2.7 | 96.9 |
| 5 | 8 | .8 | .8 | 97.7 |
| 6 | 6 | .6 | .6 | 98.3 |
| 7 | 8 | .8 | .8 | 99.0 |
| 8 | 8 | .8 | .8 | 99.8 |
| 9 | 2 | .2 | .2 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

**Intervention**

Interventions were classified in two categories “Go For It” category and “Use Caution” category as classified in TeachingLD website.

1- “Go for It” category included 13 instructional interventions. Table 9 shows the frequency of the articles explained these interventions.

Cognitive Strategy Instruction explained in 14 1.4% articles. Vocabulary Instruction appeared in eight (0.8%) articles, Self-Regulated Strategy Development reported in 12 (1.2%) articles, Functional Behavioral Assessment discussed in 16 (1.6%) articles, Fluency Instruction stated in four (0.4%) articles, Phonics Instruction explained in three (1.2%) articles, Graphic Organizers highlighted in 15 (1.5%) articles. Reading Comprehension Instruction reported in five (0.5%) articles. Phonological Awareness discussed in nine (0.9%) articles. Class-wide Peer Tutoring expounded in 17 (1.7%). Mnemonic Instruction stated in eight (0.8%) articles.

Formative Evaluation illustrated in 17 (1.7%) articles and Direct Instruction showed in 10 (1%) articles.

Table 9
*Intervention from "Go For It" Category*

| Intervention | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not Mention | 892 | 86.6 | 86.6 | 86.6 |
| Cognitive Strategy | 14 | 1.4 | 1.4 | 88.0 |
| Vocabulary Instruction | 8 | .8 | .8 | 88.7 |
| Self-Regulated Strategy Development | 12 | 1.2 | 1.2 | 89.9 |
| Functional Behavioural Assessment | 16 | 1.6 | 1.6 | 91.5 |
| Fluency Instruction | 4 | .4 | .4 | 91.8 |
| Phonics Instruction | 3 | .3 | .3 | 92.1 |
| Graphic Organizers | 15 | 1.5 | 1.5 | 93.6 |
| Reading Comprehension Instruction | 5 | .5 | .5 | 94.1 |
| Phonological Awareness | 9 | .9 | .9 | 95.0 |
| Class-wide Peer Tutoring | 17 | 1.7 | 1.7 | 96.6 |
| Mnemonic Instruction | 8 | .8 | .8 | 97.4 |
| Formative Evaluation | 17 | 1.7 | 1.7 | 99.0 |
| Direct Instruction | 10 | 1.0 | 1.0 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

2 "Use Caution" category included 5 instructional practices. Table 10 shows the number of articles explained these interventions.

Social Skills Instruction stated in 36 (3.5%) articles, Co-Teaching discussed in 23 (2.2%) articles, Reading Recovery included in one (0.1%) article , Cooperative Learning explained in three (0.3%) articles , and High-Stakes Assessment did not explain in any (0%) article.

Table 10
*Intervention from "Use Caution" Category*

| Intervention | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Not Mention | 967 | 93.9 | 93.9 | 93.9 |
| Social Skills Instruction | 36 | 3.5 | 3.5 | 97.4 |
| Co-Teaching | 23 | 2.2 | 2.2 | 99.6 |
| Cooperative Learning | 1 | 0.1 | 0.1 | 99.7 |
| Reading Recovery | 3 | 0.3 | 0.3 | 100.0 |
| Total | 1030 | 100.0 | 100.0 | |

# Chapter 5

# DISCUSSION

This chapter discusses findings that may contribute some ideas to the publishers and editors of the two targeted journals and other journals in the special education publication field. A discussion of the findings is presented in the following paragraphs.

The purpose of the study was to determine whether interventions published in two journals during the last decade, 2003-2013, for students with learning disabilities utilized evidence-based practices or not.

## Intervention

The main finding is that there were 1030 articles published in both journals. There were 562 articles about subjects not specifically related to instructional practices. Four hundred sixty-eight articles addressed instructional practices. Thus, approximately 45.43% of published articles included instructional methods. However, only 184 had scientifically based interventions, as measured by the 18 evidence-based interventions indicated by TeachingLD website. That equates to about 17.9% of published articles.

Several specific interesting findings about the published interventions are:

1. The majority of articles utilized one intervention but 21 articles used or explained two interventions, seven articles utilized three interventions, and one article explained four interventions.
2. The most prevalent intervention is social skills intervention, and it appeared 36 times. Social skills intervention was followed by co-teaching (23 times), Class-Wide Peer Tutoring (20 times), Cognitive Instruction, Formative Evaluation and Direct Instruction (18 times), Graphic Organizers (17 times), Functional Behavior (16 times), Self-

Regulated Strategy Development (16 times), Mnemonic Instruction (13 times), Vocabulary Instruction, Reading Comprehension Instruction and Phonological Awareness (11 times), Reading fluency (five times), Phonics Instruction (four times), Reading Recovery (three times), followed by Corporative Learning (one time), and High-Stakes Assessment with no intervention.

3. The top first and second interventions are from the "Use Caution" Category. They have more attention than any another intervention. Articles related to high stakes assessment came with no intervention, but offered tips and accommodations as well as addressed test anxiety and test skills in general.

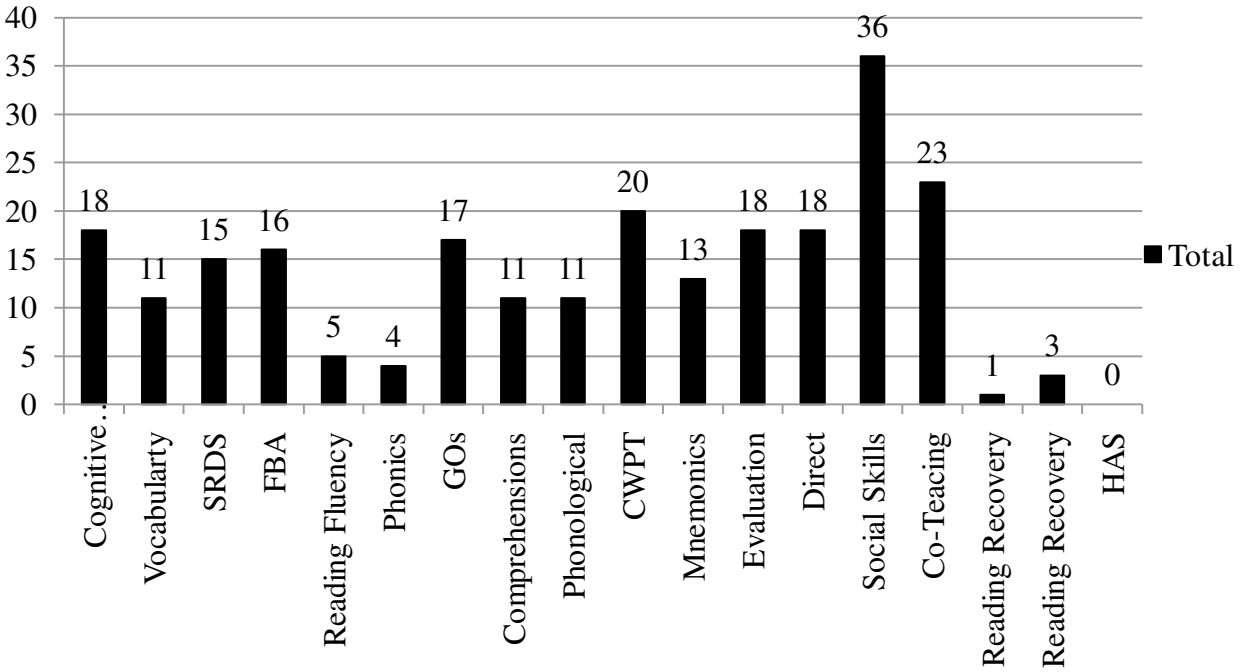


*Figure 2.* Number of EBPs by Type

4. More articles published were for elementary-aged students than other grade levels.
5. Some authors claimed theit interventions were scientifically based, however they are not mentioned within recommended interventions published by TeachingLD.Org.

6. Interventions for dysgraphia are almost not mentioned and are not given attention like reading, social skills and behavior in general. One example of an intervention targeted at dysgraphia would be the use of technology items, like computer facilitated writing, for students with dysgraphia.
7. Non-intervention articles discussed subjects such as policy, laws/legal issues, disabilities, introductions, book reviews, interviews, spotlights, special education in others countries, tips, lists of websites, technology items, lists of books and others.
8. There were 284 studies mentioned interventions other than the 18 interventions recommended.
9. No study clearly discussed the high stakes test intervention.
10. A majority of studies recommend the use of explicit systemic and direct instruction, without explanation and details of how to use them combined with interventions indicated.

**Disabilities**

There were 148 articles specifically about learning disabilities and 179 articles were about students with learning disabilities in inclusive classrooms. Thus there were 327 (31.7%) articles from the 1030 articles about LD. That was approximately a third of what was published. In my opinion, this is acceptable as there are 12 others disability categories. However, the concern is about the quality of what is published. In general, there were only about 17.9% of interventions published are evidence based practices. Figure 3 illustrates the finding about the five disability categories.

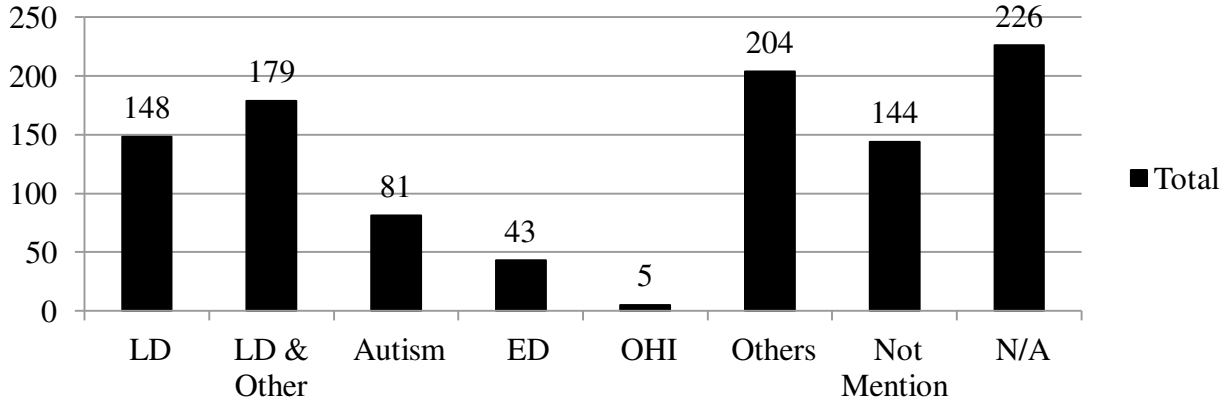


*Figure 3.* Number of Articles by Disability Type

**Academic domains**

Articles were about reading 100. Mathematics was indicated 64 times, science 17 times, language arts 61, social skills 63, and 65 articles pointed out 65 different subjects. Articles did not mention any subject were 322 and 365 articles were not applicable. Figure 4 illustrates the finding about the academic domains.

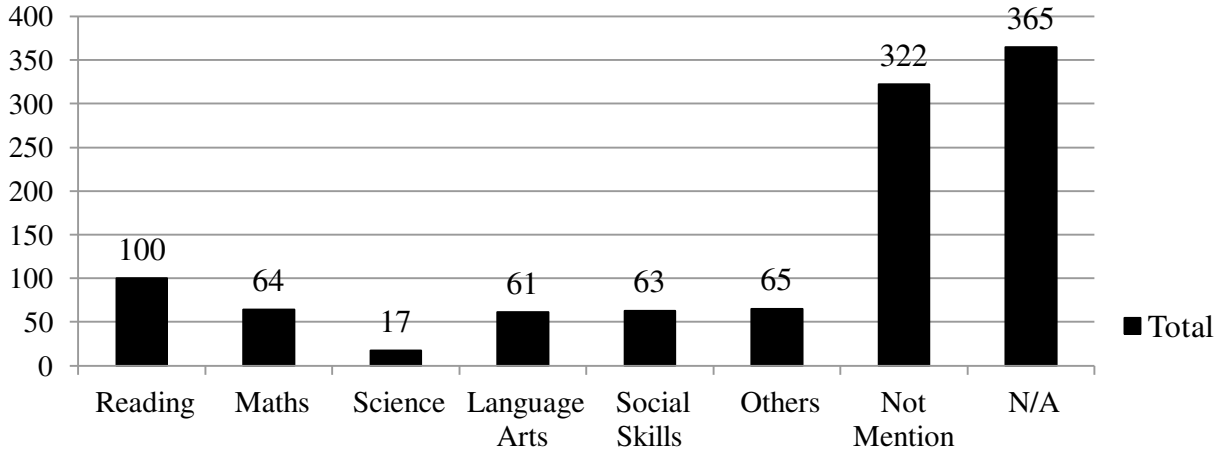


*Figure 4.* Number of Articles by Subject

## Grade

Elementary studies were published more than interventions aimed at any other grade level. Specifically, there were 277 studies focused on elementary–aged students, followed by 201 articles that did not mention the grade level, 136 articles for high school students, 104 articles for more than one grade level, 46 interventions for middle school, and preschool interventions being addressed 34 times. Articles for post-secondary were published 16 times. There were 216 articles were not applicable, as they dealt with general stuff about special education like policy, laws, special education in another country, interviews and so on. Figure 5 illustrates the finding about grade level.

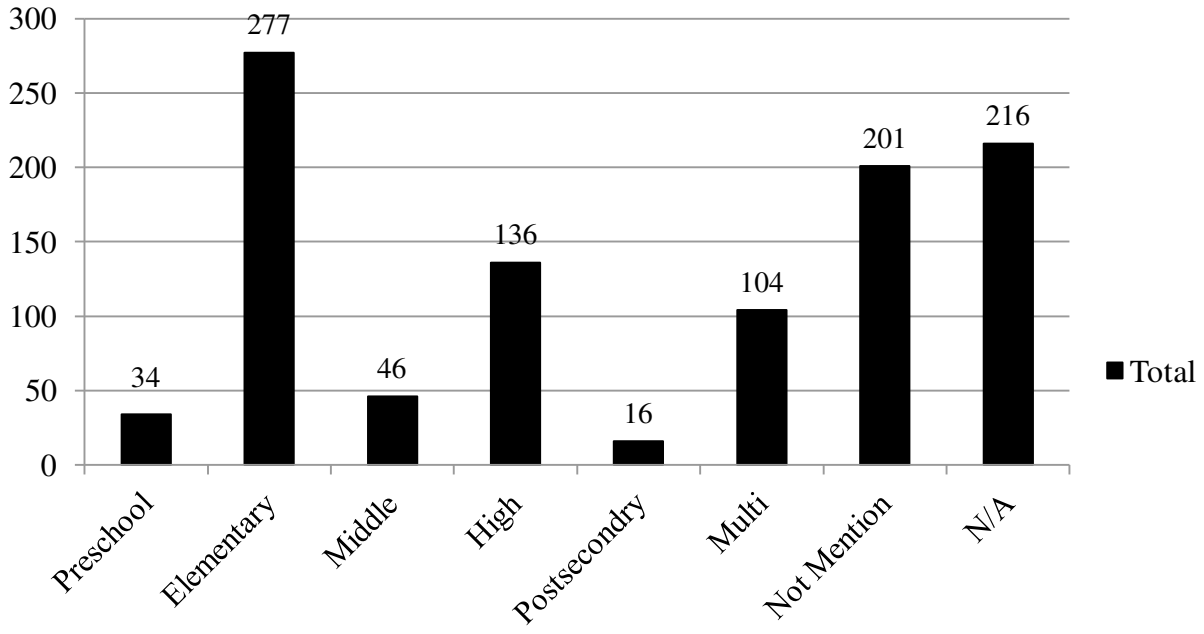


*Figure 5.* Number of Articles by Grade Level

## Setting

The majority of the articles addressed interventions for the school environment (858), followed by the other category--which includes setting like community, university or program's

location (20 and six times combined with school. Only one article addressed interventions for the home and interventions for the home, combined with school, were addressed three times. Finally, a clinical setting was used two times. There were 149 articles did not mention setting or were not applicable. The school setting is not limited to general education classrooms, but includes all school settings such as resource room, libraries, lunchrooms, playgrounds and others.

## Images

There were 1,849 images included in the articles from the targeted dates. There were 449 relevant images found and 1, 445 irrelevant images. That ratio of relevant images was 31.1%. Thus, the number of images that add value to the subject is about a third of the irrelevant images. Irrelevant images seem to be added by the publisher, rather than the author of the article, to fill a space or make the page more attractive. Figure 6 provides an illustration for the number of images found.

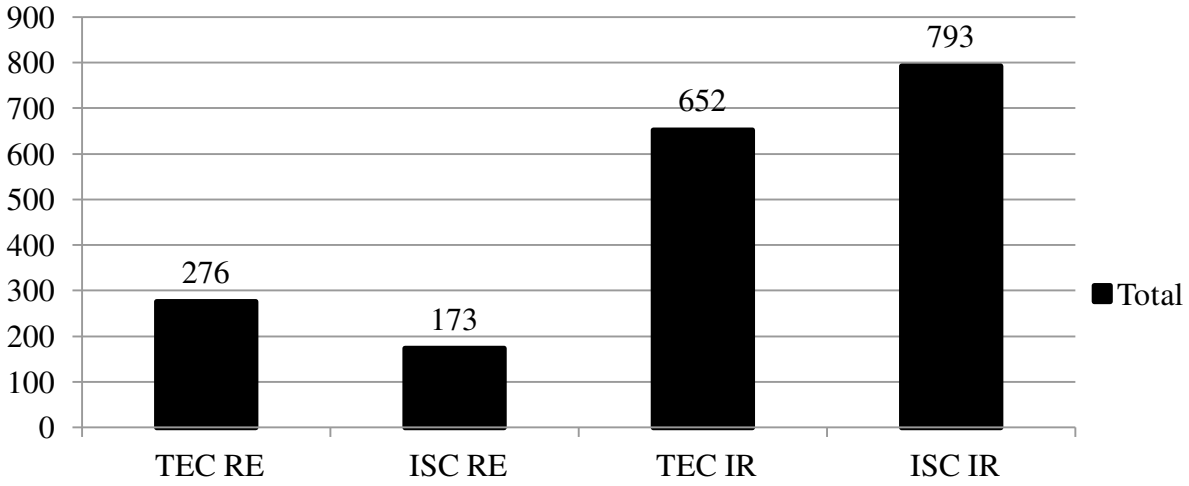


*Figure 6.* Number of Images

## Journals

The two journals had consistent publishing of the same number of issues over all the 10 years. TEC published six issues per year and ISC published five issues per year.

The number of articles published per year varies from one year to another. In generally, there were declined of the number of articles published per year in the last four years (340 articles) compared to the previous period from 2004 to 2008 (421 articles).

The number of articles published per year by each journal was very close sometimes. ISC journals published more articles in 2005 and 2011 despite that TEC published six times a year and ISC five times. Figure 7 shows the number of articles published by the two journals over the last decade.

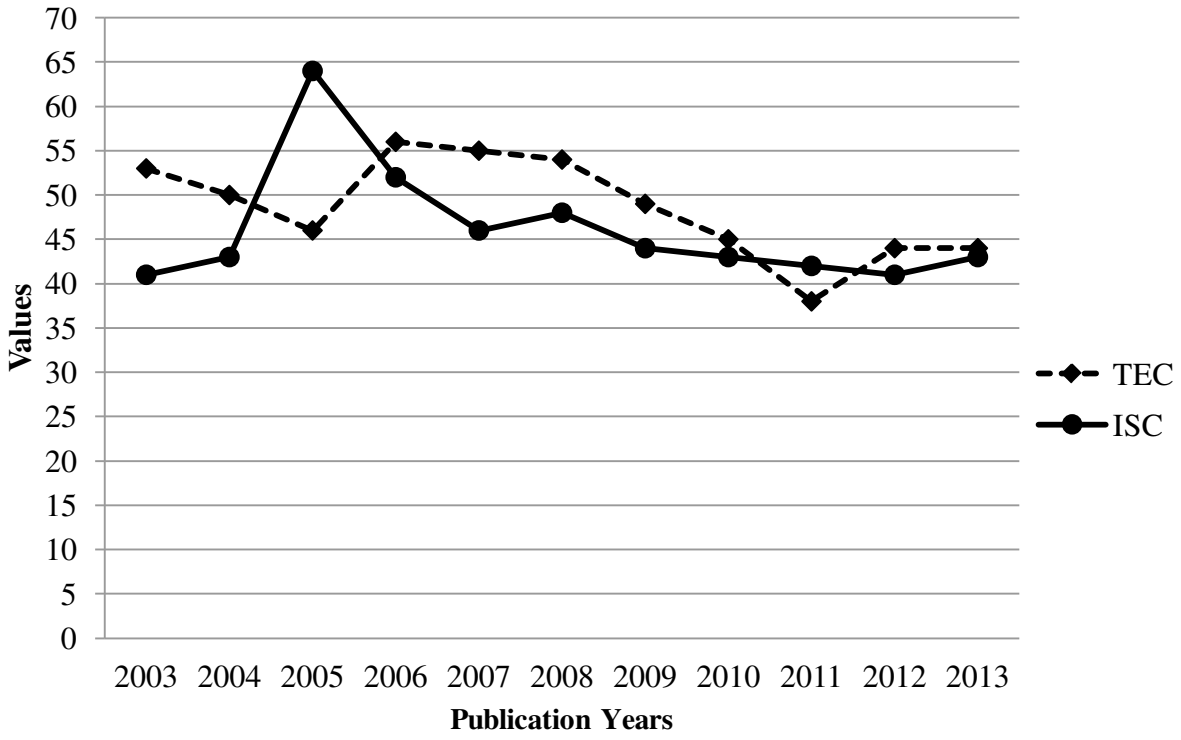


*Figure 7.* Published Articles

## Research Questions

The research questions were the following:

3. What types of articles are published in prominent practitioner journals to assist teachers working with students who have learning disabilities?
4. What are the characteristics of published intervention literature for students with

learning disabilities?

To answer the first question, *what types of articles are published in prominent practitioner journals to assist teachers working with students who have learning disabilities?* Published articles addressed different areas. There were articles about academic interventions, social skills, goal setting, self-determinations, study skills, test skills, policy, laws, professional developments, technology and so on. In general, articles addressed variety of issues that teachers of students with disabilities face. However, the amount was considered few compared to students with learning disabilities is the largest group of disability categories served under IDEA 2004. As the number of students with learning disabilities in public school is 2.4 million with ratio of 5% of all students and 42% of all students identified with disabilities (NCLD, 2014).

To answer the second questions, *what are the characteristics of published intervention literature for students with learning disabilities?* The primarily characteristics is that the amount of evidence based practices are very small of what published; only 17.9% has evidence based interventions. The elementary school students with learning disabilities got more attention frequently than others grade levels. This finding was acceptable as IDEA 2004 and other laws emphasize early intervention (IDEA, 2004). Reading subject also got much emphasis than other subjects like mathematics and science. This may be for the consideration that reading is the fundamental for success and the base of all others academic areas. The Social skills were addressed to students with autism more than students with learning disabilities were.

Co-teaching interventions and related topics is published frequently. The common definition for co-teaching is the general education teacher and special education teacher deliver the instructional materials to a heterogeneous group of students in the same classroom (Cook & Friend, 1995). This findings can be explained as their much interested and recommendations for

including students with disabilities in the general education classroom.

Transitions for high school students and related topics like self-determination, self-regulations published frequently. This is also can be explained as the percentage of students with disabilities getting a job or peruse a college degree is small.

The general conclusion that can be drawn from the study is that despite the last decade of research has demonstrated a wide variety of interventions addressed the learning disabilities; the quantity and quality were small. Some area like reading, co-teaching and transitions got much attention than others.

## Limitations

While this study investigated two peer-reviewed journals and included 1030 articles, there were many limitations to this synthesis. The primary limitation of this synthesis is the size, as only two peer reviewed journals were chosen for this study. Other investigators might have expanded the study to include other journals or chosen different journals entirely. Also, the study could expand the time frame or chose another. A similar investigation could study more than one disability or choose another disability category, too. The present study was guided by the 18 interventions mentioned by TeachingLD, which may mean some other interventions could be added. The website may have overlooked other interventions, tightened or mesmerized these lists. Subjects are limited to five, so different subjects could be chosen or added. As a result, those limitations may limit other findings. Finally, the study is limited to the analysis of the two journals and for the selected time frame, and it is hard for the results to be generalized to others journals or time frames.

## Future Research

More research is needed to address the quality of professional journals especially in light of new regulations of IDEA 2004 and NCLB 2001. These laws emphasize the use of rigorous, scientifically based research interventions to improve students' performance. Also, these laws require the schools to hire high quality teachers. Future research could examine more professionals' journals to find what they introduce to practitioners, as professional journals are considered the resource for evidence-based practices.

Based on this study, several recommendations are addressed for future researchers. Each recommendation is explained below.

1- Research needs to expand the number of variables such as size to include more peer-reviewed journals and include more characteristics, like disabilities, academic domains and others

2- Research needs to include all disability categories in IDEA 2004 and pay attention for all disabilities in each category. This they can catch neglected disabilities in each category.

3- Future research could be designed to investigate the influence of new regulations on what published in the journals.

## Recommendations for Authors / Publisher

Based on this study, several recommendations are addressed for authors and publishers. Each recommendation is explained below.

1. These journals are focused more on reading subjects for the elementary school level. Thus, more published articles for other subjects and grade levels would be helpful to create a more comprehensive research agenda.

2. The number of main articles should be consistent. Supplemental articles and other articles should not replace these main articles, such as introduction, interview, policy, book reviewed, spotlight, research results, and other minor subjects that have no empirical foundations.
3. All authors should mention and adequately describe the setting and school grade level where the best intervention works.
4. Abstract and key words are very useful and authors should be more specific and mention the subject and grade levels of their experiments or studies.
5. Grade levels should be specifically mentioned, such as informing readers if the studies occurred at K-12, elementary, middle school, or high school. Many articles considered middle and high school as one, which was confusing.
6. The scenario content must be consistent with the content of articles. For example, a scenario was about a student in elementary but the content was about high school.
7. Authors and publishers should use the space occupied by pictures that do not support articles more efficiently by using supporting visuals, such as pictures of interventions and other relevant data. Other informative tables can also be used, such as tables for facts, reminders, do you know, about, basic details, definitions, ideas, resources and other helpful information. Images can enhance reader experience if used with consideration and careful thought.
8. The space at the bottom of the references page can be used wisely for the benefit of the journal, such as putting advertisement and other unrelated images to the article content.

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# APPENDICES

# APPENDIX A

## CODING SHEET (INSTRUMENT)

**CODING SHEET**

| JOURNAL | YEAR | VOLUME | ISSUE | # of Articles |
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| ARTICLE INFO | | | INTERVENTION | | DISABILITIES | | | | | | SUBJECT | | | | | | SETTING | | | | IMAGE | |
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| # | K | E | M | S | PS | M | N | O | CSI | VI | SRSD | FBA | FI | PHI | GOs | RCI | PHA | CWPT | MI | FE | DI | SSI | COT | CL | RR | HSA | OTHER |
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| 11 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# VITA

Talal Saeed Alhazmi is from Saudi Arabia. He was born in Al-Madinah Al-Manwarah, Kingdom of Saudi Arabia. After completing his degree at High School in 1998, he entered the University of King Abdulaziz at Al-Madinah, receiving the Bachelor of Art in English in June 2001. He entered the Graduate School in Department of Sociology at King Abdulaziz University at Jeddah in September 2009 and withdrew in April 2010 as he got scholarship to study abroad. He chose United States of America to complete his higher education. In May 2014, He received a Master's degree in Special Education from the University of Texas A&M-Commerce.

Talal's interests include Learning Disabilities, technology, professional development and teaching evidence based practices.

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