

International Policies, Identification, and Services for Students With Learning Disabilities: An Exploration Across 10 Countries

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Recently, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) reported that although countries around the world must ensure that students with disabilities receive free, inclusive, and appropriate education, students with disabilities are less likely to complete primary or secondary school in many countries. Though this is the case, very little has been published regarding the legislative efforts and the implementation of services and supports specifically for students with learning disabilities (LD) in reading or dyslexia around the world. Therefore, the purpose of this review is to explore legislative efforts, services, and interventions provided to students with learning disabilities from ten countries worldwide: Canada, China, Denmark, Germany, Japan, Mexico, Netherlands, Singapore, Taiwan, and United Kingdom. Discussion and implications for research and practice are provided based on themes identified across countries.

Keywords: Learning Disabilities, International Educational Laws, International Special Education Laws, Special Education Services, Dyslexia

INTRODUCTION

In 2017, the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2017) reported that students with disabilities are less likely to complete primary or secondary school in many countries around the world. In addition, Article 24 of the United Nations Convention on the Rights of Persons with Disabilities (2006) stipulates that countries around the world must ensure that students with disabilities receive free, inclusive, and appropriate education at primary and secondary levels. Although this is the charge, very little has been published (Sideridis, 2007) regarding legislative and policy efforts and the implementation of services and supports for students with learning disabilities (LD) in reading or dyslexia around the

world. Therefore, the purpose of this study is to explore current legislative policies and implementation of supports and services for students with LD in reading or dyslexia in ten countries around the world. Specifically, we selected countries from North America, Asia, and Europe that we thought may exhibit trends in the definition, identification, and provision of services similar to the U.S. in order to make comparisons and better understand the supports for students with LD in reading or dyslexia from a global perspective.

THE LEARNING DISABILITIES MOVEMENT: A CULTURAL EVOLUTION

In order to make a global comparison of legislative trends and implementation of services for students with LD, it is important to understand the history of the LD movement. The field of LD originated in the 1800s and is often presented in three time periods (Hammill, 1993). According to Hammill, early in the foundation period (early 1800s to 1960), researchers in Europe focused on medical observations of patients with brain damage made by Gall and others (Hallahan & Mercer, 2001; Hammill, 1993). As part of the language disorder aphasia, the historical and cultural evaluation of specific LDs such as dyslexia were first referred to as “word blindness” by neurologists in Europe. French neuro-anatomist Broca, German neurologist Wernicke, and Jackson provided the first major contributions to the field of LD through their research on aphasia in the early to mid-19th century (Richardson, 1992). Around 1870s, Broadbent and Kussmaul were the first to conduct comprehensive studies around word blindness. It was not until 1887 that the German psychologist Berlin coined the term dyslexia. From there, other European researchers such as Hinshelwood in 1917, Geschwind, Levitsky, Galaburda, and Orton in the 1930s provided more extensive research in the neurological and physical aspects (i.e., brain) of dyslexia and how brain function affects verbal and non-verbal communication (Richardson, 1992). Later in the foundation period, the focus shifted to translating theory to educational practice including attention to reading disabilities, attention, perceptual-motor skills, and language deficits.

Early in the emergent period (1961-1974), the term *learning disabilities* was adopted and later defined by the National Advisory Committee on Handicapped Children led by the American researcher, Kirk (Hallahan & Mercer, 2001). In 1965, the discrepancy model for identification of students with LD was re-introduced by Kirk’s former student, Bateman (Hallahan & Mercer, 2001). Finally, during the solidification period (1975-1986), a consensus on the definition and manner in which LDs were identified was made, increasing research-based procedures and interventions to support students with LD.

Shifting Laws and Policies

The Specific Learning Disabilities Act was passed by the U.S. Congress in 1969 (Hallahan & Mercer, 2001) providing positive impetus to move the field of LD forward. In 1975, the Education for All Handicapped Children Act (EAHCA) was signed into law. EAHCA required free appropriate education and equal educational opportunity for students with disabilities (Hallahan & Mercer, 2001; Hammill, 1993). In addition, it was required that learning disability is defined more precisely. Subsequent regulations published in 1977 established LD as a defined category, eligible for

all the services, rights, and funding of other disability categories included in EAHCA (Hallahan & Mercer, 2001). Additional regulations addressed the assessment and remediation of students with LD and the ability-achievement discrepancy model. The U.S. government also provided funding for five major higher education research institutes, which would investigate various issues in the field. This research provided insight into effective instruction and interventions for students with LD (Hallahan & Mercer, 2001).

During the most recent period, controversy has risen around several issues. From 1976 to 1999, the number of students identified as having LD doubled, which most researchers acknowledge was because many students were misdiagnosed (Hallahan & Mercer, 2001). This led to contentious debates about the process used to identify students with LD (i.e., a severe discrepancy between achievement and intellectual ability) and the misidentification of students from culturally and linguistically diverse backgrounds. In addition, concerns surfaced that the discrepancy model for identification of students with LD was a “wait to fail” model. Researchers began to explore other approaches to identification of students with LD to alleviate these concerns (Fletcher, Coulter, Reschly, & Vaughn, 2004). The Individuals with Disabilities Education Improvement Act (IDEIA, 2004) specified that local schools could no longer require the use of the discrepancy model to identify students with LD. Instead, schools could utilize a process that determined student’s responsiveness to scientific, research-based instruction as part of the evaluation process (i.e., response-to-intervention). Throughout its history, the field of LD has faced many changes. Many of these changes appeared in the services and settings provided for students with LD. These changes, as well as a variety of definitions, can also be found in the educational systems of other countries.

PURPOSE AND RESEARCH QUESTIONS

Previous reviews of the literature (i.e., Sideridis, 2007) identified diagnostic criteria for the identification of students with LD and related educational practices for a number of countries yielding interesting results when compared to practices in the U.S. The purpose of this study was to explore current legislative policies and implementation of supports and interventions for students with LD in reading or dyslexia in ten countries around the world. This systematic review of the literature focused on the following research questions:

1. How do countries around the world define learning disabilities in legislation and policy and identify students with learning disabilities for educational purposes?
2. What services, supports, and interventions are provided to students with LD in reading or dyslexia based on each country’s legislation and policies?

Method

A systematic review of the literature was conducted in order to understand the supports, services, and interventions for students with LD in reading or dyslexia around the world. First, we selected countries from different areas around the world (e.g., North America, Asia, and Europe) that have similar legislative trends and ser-

vices to those implemented in the U.S. Then, we conducted an electronic search using professional databases available through university libraries and school districts in the United States. The initial document search was conducted via electronic databases including ERIC, Education Full Text (EBSCO), PAIS (international policy), HAPI, Redalyc.org, Google, Google Scholar, and Academic Search Complete. Finally, we hand searched peer-reviewed journals, government reports, government laws and regulations, and professional organization websites and publications to obtain more information.

Inclusionary Criteria

In order to remain consistent in our review of the literature, inclusionary criteria were established at the start of the search. Initial inclusionary criteria included:

- a) documents published from 2010 until September 2016
- b) keywords: definition of learning disabilities, services for learning disabilities, interventions for learning disabilities, learning disabilities, severe learning disabilities, reading disabilities, dyslexia.

After the initial electronic search, hand searches were conducted specific to each country using documents published from 1995 to 2016.

RESULTS

Results of the systematic review of the literature are presented by country in alphabetical order. Each country is presented with information about special education law, definition and identification of LD in reading or dyslexia, and supports, services, or interventions provided for students with LD. A summary of the findings can be found in Table 1.

Canada

Special education law. Although Canada does not have national legislation in place that provides access to special education for individuals with disabilities (Wong & Hutchinson, 2001), the Canadian Charter of Rights and Freedoms (1982), an anti-discrimination bill, ensures that the civil rights of individuals with disabilities are protected. In addition, each Canadian province has policies in place that ensure the right to free public education for individuals with disabilities.

Learning disabilities in Canada. Learning disabilities is a recognized disability in Canada. However, due to the decentralized nature of special education policy, local agencies support families and individuals with disabilities. Individuals with LD and their advocates turn to local municipal chapters or provincial learning disabilities associations (LDAs). These local chapters are associated with a national association, the Learning Disabilities Association of Canada (LDAC), and advocate for educational services of students with LD (Wobick, 2013).

Table 1. Overview of 10 Countries provisions for students with LD

	One Specific law or policy governing special education?	Specific language LD or dyslexia?	Specific definition/ identification process	Services/ interventions provided
Canada	No	Learning Disabilities	Yes	Yes
Mexico	Yes	Learning Disabilities (temporary disability)	No	Yes
Denmark	Yes	Specific Reading Disabilities Dyslexia/Dyscalculia	No	Yes
Netherlands	No	General “Learning and behavioral Problems”	Yes	No
Germany	No	N/A	No	Yes
United Kingdom	Yes	Learning Difficulties	Yes	Yes
Taiwan	Yes	Learning Disabilities	Yes	Yes
Singapore	No	Learning Disabilities	Yes	Yes
China	Yes	N/A	No	No
Japan	No	Dyslexia	Yes	Yes

Definition and identification of LD. Most Canadian provinces recognize the definition put forth by LDAC (2016) which refers to “Learning Disabilities as a number of disorders which may affect the acquisition, organization, retention, understanding or use of verbal or nonverbal information. These disorders affect learning in individuals who otherwise demonstrate at least average abilities essential for thinking and/or reasoning” (LDAC, 2016). In addition, the definition explains that LD is a lifelong disability which is expressed in varied ways over an individual’s lifetime (LDAC, 2016).

Early identification of LD is supported in each province. Typically when a classroom teacher identifies a struggling student, the pre-referral process is initiated. This process includes systematic observation and evaluation of the student’s challenges and strengths in both learning and behavior and an analysis of instruction to rule out inadequate instruction (Alberta Learning, 2002). In addition, instructional modifications are implemented and results tracked. The push to examine the effectiveness of classroom instruction and student’s response to instruction parallels the growing use of response to intervention (RTI) within schools in the U.S.

Supports and interventions. Individuals with LD receive instructional and behavioral supports and services. Specific supports include education in inclusive settings, differentiated instruction, and assistive technology as well as direct, corrective social/behavioral skill-building instruction.

China

Special education law. Special education began to receive attention when the People’s Republic of China was established in 1949. At that time, the Chinese government instituted laws and policies to safeguard the right to education for students with disabilities. Additionally, funds were allocated for the education of students with disabilities. Separate schools opened to educate students with intellectual disabilities and visual and hearing impairments. However, it was not until 1982 that compulsory education for students with disabilities took effect.

Beginning in 1986, the Compulsory Education Law of the People’s Republic of China mandated nine years of compulsory education for students with disabilities (Kritzer, 2011). In addition, Article 18 of the Law on the Protection of Persons with Disabilities was passed in 1990; this statute specifically emphasized that the state shall provide free education to all students with disabilities. Thereafter, educational institutions from preschool through high school were required to provide education to all students with disabilities, and education for students with disabilities became a part of mainstream schools. In 1994, the Regulations on Education for Persons with Disabilities Act (Chinese State Council, 1994) was passed. This act emphasized nine years of compulsory education for students with visual impairments, hearing and speech impairments, physical disabilities, intellectual disability, and psychiatric disability, however, it failed to specify the educational services required for students with autism and learning disabilities (Deng, Poon-McBrayer, & Farnsworth, 2001).

Following passage of the Compulsory Education Law (1986), the *Learning in Regular Classrooms* initiative was launched to educate students with disabilities in regular schools. Since that time, China has conducted research on learning in general education classrooms (Deng & Harris, 2008), and students with disabilities have

been included in general education classes in compliance with the requirement for compulsory education for students with disabilities. Even though students with disabilities have been included in general education classes, there is dearth of trained teachers and specialized services for students with disabilities in mainstream schools.

Learning disabilities and dyslexia in China. Although some disabilities such as dyslexia and autism were recognized earlier in Western countries, they were not included as disability categories in legislation passed in the second half of the 20th century in China (Deng & Harris, 2008). It was not until the early 2000s that reading difficulties and dyslexia began to receive increased attention as an increased number of studies examining reading difficulties in native Chinese speakers were conducted (Chung, Ho, Chan, Tsang, & Lee, 2010; Ho, Chan, Lee, Tsang, & Luan, 2004). Researchers report that morphological deficits, rapid-naming deficits, and orthographic deficits are the most common deficits among the Chinese-speaking children with dyslexia (Ho, Chan, Lee, Tsang, & Luan, 2004; Ho, Chan, Tsang, & Lee, 2002; McBride-Chang, Liu, Wong, Wong, & Shu, 2012).

Definition and identification of LD. Though specific diagnostic criteria for dyslexia exists in Hong Kong, mainland China currently has neither a definition of LD nor any means of identifying individuals with LD. In Hong Kong, dyslexia is diagnosed using a 3-pronged approach: average or above average intelligence (i.e., IQ > 85), a discrepancy of one standard deviation between the literacy composite scores and the IQ score, and at least one other cognitive composite score that is discrepant from the respective age mean in reading and writing (Ho, Chan, Chung, Lee, & Tsang, 2007).

Supports and interventions. Although China launched the *Learning in Regular Classrooms* initiative in 1986 to promote inclusive education, several challenges interfere with the delivery of special education services in China including large class sizes, lack of teacher training, transportation, and the whole class teaching model (Deng & Harris, 2008; Xu, Cooper, & Sin, 2018). Additionally, the lack of diagnostic criteria for dyslexia in China is of concern (Kritzer, 2013).

Denmark

Special education law. A small number of special needs schools exist in Denmark including specialized schools for students who are deaf, blind, and deaf-blind; students with multiple disabilities; and students with epilepsy. For all other students, the *Folkeskole* Act, a general education law passed in 1993, requires public schools to meet the needs of all students by differentiating instruction within inclusive classrooms (European Agency for Special Needs and Inclusive Education [EASNIE], Country Information for Denmark, 2018; Jandorf, Haven, & Nielsen, 2004). In spite of the requirement to develop inclusive education systems, it was later determined that schools were no more inclusive than before the legislation was passed, and the number of students in special schools continued to increase. In response, the *Folkeskole* Act was amended by Danish parliament in 2012 (EASNIE, Country Information for Denmark, 2018). The amended act defined the goals of an inclusive school, provided schools with more concrete and realistic guidelines on how to meet the diverse educational needs of students, and supplied information on how to differentiate and individualize instruction based on students' needs. The Ministry of

Education supported this legislation through a task force and launched a knowledge center that would collect information, support research programs, and disseminate information and ideas to municipalities.

Learning disabilities and dyslexia in Denmark. Until recently, no common practice for the identification of individuals with dyslexia or learning disabilities in reading existed in Denmark. Based on a survey of the native population, Jandorf and colleagues (2004) estimated that dyslexia existed in three to five percent of the population. Other self-report surveys of adults indicated a rate of dyslexia of seven percent. To address this difference in prevalence and to make diagnosis and services more accessible to students, the Ministry of Education in collaboration with researchers developed the *Danish Dyslexia Test* (Poulsen, Elbro, Møller, Juul, Petersen, Arnbak, 2016) for use with students eight years of age and up. The web-based test of spelling and decoding, based on international research in dyslexia, proved to be more accessible for individuals in remote areas and provided necessary guidance so individuals can access needed supports (Nobelius & Tidemann, 2015).

Definition and identification of students with disabilities. Until recently, no specific criteria existed to determine the need for special education services in public schools. Teachers in inclusive classrooms were usually the first to raise concerns regarding a student's educational needs. Subsequently, experts from the Pedagogical Psychological Counseling Service investigated the nature of the student's needs and offered suggestions to the teacher (Jandorf et al., 2004). Teachers are expected to be qualified to teach all children including those with disabilities and therefore, provide supplementary instruction in the form of additional lessons to support the needs of struggling students (EASNIE, Country Information for Denmark, 2018). There is no need for a referral, a special evaluation, or a label of dyslexia in order to receive supplementary instruction as long as the teacher, head teacher, and parents are in agreement. If these supports are not enough to meet the student's needs, an assessment is conducted by the school to determine whether the child requires special consideration or additional support within the school. Section 3 of the *Folkeskole Act* requires that this determination be made in conjunction with the parents and student.

Supports and interventions. Special education services for students with difficulty in reading may be provided in an inclusive setting, a special class, or combination of both. Students may receive special education services in an inclusive setting for the content areas (supplementary to other instruction), special education instruction that supplants instruction in one or more subjects (EASNIE, Country Information for Denmark, 2018), or in special classes that focus on the needs of students with attention deficit hyperactivity disorder (ADHD), dyslexia, intellectual disabilities, hearing impairments, and visual impairments (Jandorf et al., 2004). In addition to instructional supports, schools are required to provide teaching materials and instructional technology needed by the student for use both in school and at home. In some cases, a teaching assistant also supports the student's needs.

Germany

Special education law. In Germany, students with disabilities are protected under Basic Law (*Grundgesetz* (since 1980), Book Twelve of the Social Code (*Sozialgesetzbuch XII*), and the constitutions of each *Länder* (the 16 states in Germany) (EAS-

NIE, Country Information for Germany, 2018). Specific policies protecting students with disabilities are contained in the 1994 Recommendation on Special Education in the Schools of the Federal Republic of Germany (1994 Recommendation). Most recent guidance, updated in 2011, is found in Recommendation on Inclusive Education in Schools of the Federal Republic of Germany (EASNIE, Country Information for Germany, 2018). These policies protect students who may experience difficulty in school because of specific disabilities (e.g., blind/visual impairment, deaf/hearing impairment, intellectual disability, behavioral problems), problematic situations, or because of “temporary learning difficulties (e.g., slow learners, reading and writing difficulties)” (EASNIE, Country Information for Germany, 2018, para. 40). It was noted that in practice, it is often difficult to classify students with disabilities based only on specific categories because many had multiple disabilities. To remedy this, beginning in the 1999-2000 school year, all *Länder* agreed to a broad, joint definition of a student with disabilities. The definition, explained in the 1994 Recommendation states, “Special needs education relating to development is to provide for children and adults with disabilities or who have limited possibilities for education, development and learning” (EASNIE, Country Information for Germany, 2018, para. 43).

Learning disability and dyslexia in Germany. In addition to providing special needs education for students with specific disabilities, students experiencing temporary learning difficulties including reading and writing difficulties are eligible for special needs education (EASNIE, Country Information for Germany, 2018).

Definition and identification of LD or dyslexia. The Federal Association for Dyslexia and Dyscalculia (*Bundesverband Legasthenie und Dyskalkulie*; n.d.) references the International Classification of Diseases (ICD-10) (World Health Organization [WHO], 2005) for information on definition and diagnosis of specific learning disorder. The ICD-10 defines specific reading disorder as a significant impairment of reading skills as compared with the expected reading level based on the child’s age, grade placement, and general intelligence. Diagnostic assessments may be conducted by child or adolescent psychiatrists, psychotherapists, school psychologists, or teachers (WHO, 2005). School age children must also be assessed by a special education teacher to determine the type and level of disability and needs. Reading performance is typically assessed using individually-administered, standardized tests of reading accuracy and comprehension although the diagnostic process varies depending on the region of the country. If a child is diagnosed with dyslexia before beginning school, the parents may submit relevant reports and documents to school authorities who will use that information to determine appropriate placement and services.

Supports and interventions. Each *Länder* in Germany operates its educational system independently from the rest of the country. Curriculum and syllabi are developed for all students in addition to procedures to support children with special education needs. Throughout Germany, educational research has supported inclusive teaching approaches. Because of this emphasis on inclusive teaching approaches, the previous practice of educating students with disabilities in special schools (*Förderschule*) shifted to focus on the needs of the individual student including the benefit of students attending a school close to their home. Within this system of inclusive schooling, cooperative instruction and collaboration among general and special education teachers and support staff is common.

Because each *Länder* operates its education system independently from others, services available to students with difficulty in reading vary from one to another. In some *Länder*, instructional supports may be provided during the school day while in others, no support is provided during school, so parents must seek help outside of school (Löwe & Schulte-Körne, 2004), however, students experiencing difficulty with reading are typically supported through a combination of approaches to differentiation within the general education system. Special educational support may be provided during class instruction or to supplant class instruction. This includes classes for students with dyslexia. Assistance in local schools, when available, also varies greatly depending upon the knowledge and training of the teachers, and teachers are free to select the instructional methods they will use (EASNIE, Country Information for Germany, 2018).

Japan

Special education law. Initially, the School Education Act of 1947 did not include students with disabilities; however, the act was amended a number of times in subsequent years to address the needs of students with disabilities. Beginning in 1979, the Compulsory Special Education system required public education to all students with disabilities, however, only within special education schools. In 2002, the system for educating students with severe disabilities in their neighborhood schools was established but only if deemed appropriate by the Board of Education, however, this new system still failed to include students with disabilities in the mainstream and account for the individual rights of students with disabilities. Based on a 2009 amendment, special education schools were charged with providing students with visual and hearing impairments, behavioral disorders, intellectual disabilities, physical limitations, and health-related impairments, the appropriate skills and knowledge to improve daily living and promote independence (Nagano & Weinberg, 2012). Students with LD or developmental disabilities receive individual integration into regular classrooms. Students with LD typically attend regular classes in the mainstream and receive individualized support for a few hours a week during the school day or after school (Mithout, 2016).

Definition and identification of learning disabilities and dyslexia. The broad category of reading disorders includes dyslexia and other reading deficits which may co-occur with language disorders. Welty, Menn, and Oishi (2014) define dyslexia “as problems with decoding written text” (p. 121). The Japanese language consists of two different types of characters: kana, which is based on syllables and kanji, which is based on the Chinese characters. Japanese children struggle to read kanji because of the different pronunciations and reading variations among words that are based on the context (Welty et al., 2014). Until recently, the incidence of dyslexia in Japan was considered to be lower than some other countries, however, recent statistics show that more than 2.5 % of students in Japanese schools have been determined to have dyslexia (Koeda, Seki, Uchiyama, & Sadato, 2011).

Based on the results of neurological and educational studies of Japanese students, researchers found structural differences in the brains of students with dyslexia as compared to students without dyslexia (Kita et al., 2013) and difficulties in phonological processing skills. Great variability exists in the tools utilized to identify

dyslexia in Japanese-speaking children. In addition, the onus for identification has been on teachers who have limited understanding of characteristics of and identification of students with dyslexia.

Supports and interventions. Japan is considered to be 30 years behind the U.S. in the provision of special education services to students with disabilities (Ueno, 2006). In 2004, the Developmental Disabilities Support Act (DDSA) was passed in Japan. Under DDSA, funding was allocated to establish programs, hire teachers and doctors, and to provide support services to teachers and parents of students with LD/dyslexia. Because identification of students with LD or dyslexia is largely the responsibility of teachers who vary greatly in their understanding of characteristics and identification of students, students with LD or dyslexia may go unnoticed for several years (Tanahashi, 2010). Because these students typically do not have behavior issues, when they are observed along with students with severe behavior issues or ADHD in large classes, the students with LD or dyslexia may go undiagnosed (Tanahashi, 2010). In addition, teachers are unaware of the funding allocated for the education of students with disabilities which makes them even less likely to work to diagnose students with dyslexia or LD. Lastly, although students with dyslexia benefit from individualized hands-on-learning strategies, Japanese teachers rely on whole-group instruction.

Mexico

Special education law. The General Education Law (Secretaría de Educación Pública, 1993) was the first federal law that obliged Mexican states to serve all students with disabilities. Following this mandate, in 1995 the Mexican educational, social welfare, and health agencies began implementing significant provisions in services to better meet the needs of children with learning or physical disabilities (Johnson & Hernandez Rodriguez, 2005). Currently, special education policy in Mexico discourages the use of parallel curriculum model (i.e., separate but equal) and favors inclusive or “integrated” practices within the general education classroom (Mount-Cors, 2007). Although the early 1990s brought revolutionary support and services for students and families dealing with a disability, the last two decades has not been as progressive. The political and economic trend towards neoliberal governance and spending greatly reduced the funding and resources available to support all students and families with special needs.

Definition and identification of LD/dyslexia. Although there have been great strides in the provision of inclusive and integrated education for students with disabilities, LD is not recognized as a distinct disability category in Mexico, however, a provision stating that LD is a temporary disability that requires services in public schools exists (Fletcher & De Lopez, 1995). The term LD is used interchangeably with reading disability or dyslexia in the literature (Poblano, Borja, Elias, & Garcia-Pedroza, 2002; Zambrano-Sánchez, Martínez-Wbaldo, & Poblano, 2010). Students who demonstrate difficulty learning grade level content as compared to their peers and who need adaptations to achieve curricular benchmarks are entitled to receiving supports within the general education setting (Fletcher & De Lopez, 1995).

Supports and intervention. The Mexican government supported the development of multidisciplinary teams called the Unidad de Servicios de Apoyo a

Educación Regular (e.g. Units of Support Services to Regular Education) (USAER) (Fletcher & De Lopez, 1995; Reich-Erdmann, 1999). Members of the USAER are charged with providing assistance and guidance to children and their teachers within the general education classroom when possible. If not within the general education setting, an alternative setting called Centers for Multiple Attention (CMA) is provided. CMA provides educational services to children with disabilities in a separate setting but prepares them for future integration within the general education classroom when possible (Reich-Erdmann, 1999). Supports that should be provided for students with disabilities include special education teacher support, accommodations, differentiation in curriculum and materials, and adaptation of classroom space (Fletcher, Dejud, Klingler & Mariscal, 2003).

Netherlands

Special education law. Earlier laws governing education for all students in the Netherlands include the Primary Education Act (1981 & 1998), the Special Education Interim Act (1985), and the Law on the Expertise Centres (1998). In the last 10 years, the emphasis was on increased integration of students with special needs in mainstream settings and the associated reduction in the number of students enrolled in special schools. Policy leaders recognized that increased integration of students with special needs into mainstream settings placed additional demands on schools and teachers in the way that they design and implement curriculum. Policy leaders also acknowledged that mainstream teachers varied greatly in their knowledge, skills, and attitudes toward teaching students with special needs. Given those realities, an emphasis on curriculum development, schoolwide planning, and professional development for teachers was planned and pilot programs were initiated. Outcomes from pilot programs were considered when legislation was revisited in 2014. Most recent policy, the Inclusive Education Act of 2014 (*Wet Passend Onderwijs*), requires each local school board to provide adequate education for every student regardless of educational needs and support required (EASNIE, Country Information for Netherlands, 2018; Expactica Communications BV, 2017).

Learning disabilities and dyslexia law in the Netherlands. Two provisions of educational law in the Netherlands provide language directly related to dyslexia. Specifically, the Law on Secondary Education provides funding for remedial support and the statutory order on final exams provides accommodations such as extended completion time although these provisions within the law are interpreted differently depending on the school (van den Bos, 2004).

Definition and identification of LD or dyslexia. The Committee on Dyslexia of the Health Council of the Netherlands (Committee on Dyslexia), a scientific advisory board to the government and parliament, published a manuscript called "Dyslexia: Definition and Treatment" (1995; Gersons-Wolfensberger & Ruijsenaars, 1997). Specifically, dyslexia is defined as being "... present when the automatization of word identification (reading) and/or word spelling does not develop or does so very incompletely or with great difficulty" (Gersons-Wolfensberger & Ruijsenaars, 1997, p. 209). The impact on reading accuracy and fluency in individuals who meet this definition of dyslexia is "severe and persistent and resists the usual teaching methods and remedial efforts" (Gersons-Wolfensberger & Ruijsenaars, 1997, p. 209). As such,

the Committee on Dyslexia stressed the need for and benefits of early intervention. It emphasized that if students are struggling to read, they should be systematically identified so that they be evaluated and receive intervention within the educational system (Stevens & van Werkhoven, 2001). Those who do not respond to up to six months of additional intervention should be referred for specialized diagnosis and treatment. Gersons-Wolfensberger and Ruijsenaars (1997) estimated that from one to three percent of all students may be referred.

Supports and interventions. Students with special needs are supported in a number of different settings based upon the level of need. Young children with learning and behavioral difficulties and children with moderate learning difficulties are often educated in separate special schools focused on disability categories (e.g., students with visual disabilities, hearing impairment, behavioral disorders, and physical, intellectual, and multiple disabilities) while students with mild disabilities attend fully inclusive mainstream schools (EASNIE, Country Information for Netherlands, 2018).

Two types of interventions are typically employed for students who have difficulty with reading and writing: school-based remediation and medical specialist treatment. Not all schools have a teacher trained to provide remediation, so parents and guardians may have to pay for intervention outside of school (Committee on Dyslexia, 1995; Gersons-Wolfensberger & Ruijsenaars, 1997). School-based remediation is carried out by trained teachers or speech and language therapists while medical specialist treatment is usually provided by an educational psychologist based in the healthcare system who specializes in diagnosis and treatment of learning disorders such as dyslexia. The Committee on Dyslexia report emphasized the use of scientifically-based approaches along with the need for high quality research that identifies additional models and treatment approaches (Gersons-Wolfensberger & Ruijsenaars, 1997).

Singapore

Special education law. Singapore is a young nation in Southeast Asia with only about 50 years of history. Before its independence from the British in 1965, charity organizations played an important role in supporting children with physical disabilities and sensory impairments (Lim & Nam, 2000; Poon, Musti-Rao, & Wettasinghe, 2013). Education for children with mild disabilities has been recognized and services for these students were established in the 1970s (Poon et al., 2013).

Definition and identification of learning disabilities or dyslexia. In Singapore, the term LD is used to refer to students who have difficulties in reading, writing, spelling, remembering, and organizing information (Ministry of Education, 2012). Specifically, dyslexia and ADHD are recognized as two of the most common disabilities that impact student learning both categories are specifically addressed in the Ministry of Education's Professional Practice Guidelines for Psycho-Educational Assessment and Placement of Students with Special Educational Needs (2012). Dyslexia is defined as "a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling" (Ministry of Education, 2011, p. 29). The key characteristics of dyslexia include "difficulties in phonological awareness, verbal memory and processing speed" (p. 29). In addition, it is reported that some

students with dyslexia may have co-occurring difficulty in language, motor coordination, mathematics, personal organization and concentration (Ministry of Education, 2011).

Supports and interventions. Singapore utilizes a dual education system for delivering services to students with disabilities: (a) mainstream schools, and (b) special education schools which emphasize teaching life skills to students with disabilities) (Poon et al., 2013; Walker, 2016). Students with mild disabilities including dyslexia are likely to receive special education services in mainstream primary schools. These schools typically employ at least one learning support coordinator for literacy and mathematics instruction and at least one allied educator to provide specialized instruction (Poon et al., 2013). Additionally, some centers outside of the regular schools provide specialized services and new schools cater to students who likely have some form of disability (e.g., LD or dyslexia).

Taiwan

Special education law. Special education services for students with disabilities have been mandated in the Special Education Act since 1984. This act was revised in 1997, 2001, 2004, 2009, 2013, and 2014. Thirteen categories of disability and six categories of giftedness and talents are included in the most recent version of the Special Education Act (Special Education Act Amendment, 2014).

Definition and identification of learning disabilities. Taiwan has established an official definition and identification criteria for LD in the Special Education Act, most recently amended in 2014. The definition and criteria are very similar to those used in the U.S. in six areas: (1) academic areas, (2) exclusions, (3) intra-ability discrepancy, (4) psycho-neurological processes, (5) average or above-average intelligence, and (6) use of response-to-instruction (Hsiao, 2011; Tzeng, 2007).

Supports and interventions. Students with LD in Taiwan usually receive services in general education classrooms or resource rooms. Students who are performing close to their general education peers usually receive approximately two to four hours a week of specialized instruction within general education. Students who need more intensive remedial instruction usually receive specialized instruction in resource rooms for two to four class periods a day (Hsiao, 2011).

United Kingdom

Special education law. The United Kingdom (U.K.) is comprised of four separate but linked decentralized administrations: (a) England, (b) Northern Ireland, (c) Scotland, and (d) Wales (Smith, Florian, Rouse, & Anderson, 2014). Under the 1970 Education (Handicapped Children) Act in England and Wales, the Education (of Mentally Handicapped Children) Act of 1974 (Scotland), and the Education Order of 1987 (Northern Ireland), all school-age children including those with disabilities are entitled to education. The Warnock Report of 1978 reviewed the policy and provision of special education, laid the foundations for further legislative developments across the U.K., and stressed a flexible, non-categorical approach to providing education to students who have special educational needs (SEN) (Department of Education and Science, 1978). As a result of the Warnock Report, special education developed in the four areas (administrations) along broadly parallel lines (Smith et

al., 2014). The Special Educational Needs and Disability Act (2001) amended Part 4 of the Disability Discrimination Act in England, Wales, and Scotland, and the Special Educational Needs and Disability Order of 2005 prevented discrimination against students or prospective students with disabilities in Northern Ireland (Smith et al., 2014).

Definition and identification of learning disabilities. In the U.K., the term *learning disability* is used to describe a disability that we, in the U.S., would refer to as an intellectual disability; the U.K. is the only country we found that used the term learning disability in this way (Emerson & Heslop, 2010). Instead, the term *learning difficulty* is used in the U.K. similar to the way learning disability is used in the U.S. When the term learning difficulty is used in the context of education services, it refers to individuals who have specific learning difficulties but do not have significant impairments in intelligence (Emerson & Heslop, 2010). Specific learning difficulties include those conditions that affect one or more specific aspects of learning, such as dyslexia, dyscalculia, and dyspraxia (Department of Education and Department of Health [DoE & DoH], 2015). Specifically, the Rose Report (2009) provides this definition of dyslexia: “Dyslexia is a learning difficulty that primarily affects the skills involved in accurate and fluent word reading and spelling. Characteristic features of dyslexia are difficulties in phonological awareness, verbal memory and verbal processing speed. Dyslexia occurs across the range of intellectual abilities” (p. 30). Regarding identification, a *Code of Practice*, is used to guide a multi-stage assessment procedure and intervention process within schools; teachers refer students of concern to a multi-disciplinary team for statutory assessment called a Health, Education, and Care Plan (DoE & DoH, 2015).

Supports and interventions. The majority of students with SEN are educated full-time in mainstream classes with specialist support if required. A SEN Coordinator (in England, Northern Ireland, and Wales) or a Learning Coordinator (in Scotland) is responsible for managing the provision of specialist support to students with SEN (Smith et al., 2014). The SEN coordinator leads the team in the collection of information regarding the student’s SEN (Smith et al., 2014).

IMPLICATIONS FOR RESEARCH AND PRACTICE

Findings of this systematic review of the literature show the increased attention and supports students with LD are provided around the world. This increase in supports is something that is often based on U.S. research, legislation, or practices. Future research in the area of international LD should further explore historical, legislative, and implementation trends across other countries and regions not discussed here. For example, a more thorough review of countries in South America which often lead in policies such as inclusion and supports for individuals with disabilities (e.g., Ecuador) would be informative. It is also important to evaluate the implementation of policies and the resources allocated by countries following UNESCO’s inclusive guidelines for students with disabilities in developed and developing countries. Finally, further research should investigate how published literature serves to guide current practices for students with LD across the world given the gap between research and practice seen in many countries, including the U.S.

With practice in mind, we recommend that educators across the world utilize a collaborative approach when supporting students with LD. A collaborative approach will help to address learning needs of students with LD and others who struggle academically. Parents are integral to a collaborative approach and should be involved in decision-making about their child's education so that they could help reinforce the skills taught in school at home. Additionally, it is important for the school administrators to be cognizant of the collaboration required with parents and among teachers, so they can provide common planning time and resources to facilitate parent involvement. Most importantly, culturally responsive practices (Gay, 2002) should be at the forefront of any decision-making and instruction of students with LD as the vast majority of countries around the world have rich and diverse populations.

CONCLUSION

In conclusion, variability and lack of consistency exists in the assessment, identification and services provided to students with LD across countries in the three subcontinents as compared to the United States. This is of particular importance in planning educational services for instruction of students with LD. Further research should focus on the incremental and planned changes to better serve students with LD in those countries. In addition, it is important that international organizations provide guidance and support to researchers, practitioners, and lawmakers to facilitate changes that will better serve students with LD throughout the world.

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