

**THE COMPARISON OF SPECIAL EDUCATION BETWEEN THAILAND  
AND THE UNITED STATES: INCLUSION AND SUPPORT FOR CHILDREN  
WITH AUTISM SPECTRUM DISORDER**

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*The history of special education in the United States and Thailand has followed a similar path in many ways. Both countries made compulsory education mandatory to move in a positive direction in providing special education services to children with disabilities including the provision of services for children with ASD or Autism. In Thailand, monitoring of compliance with disability law, and negative attitudes by society overall toward individuals with disabilities hamper enforcement of law, distribution of resources, family involvement, and access to individualized education programs and inclusion of students with disabilities. While effective treatments for autism have been documented in the US, this knowledge and training on effective interventions is often not filtered to more rural US schools or outside US borders. Increased collaborations within and between countries to increase knowledge and expertise is recommended. Research based interventions should be taught and implemented in countries such as Thailand and other nations.*

*History of Thai Special Education*

In the past, Thai education primarily revolved around two institutions, religious and royal education. Buddhist monks taught education to boys only. They studied in temples and learned both academic and religious subjects simultaneously. The other type of education was for children of the royal household and for upper class families, who were educated in order to serve in the court and govern in the provinces. During the reign of King Rama V (1863-1910 A.D.) there was increased recognition of the need for educated people to staff the growing bureaucracy. As a result, the Thai education system was modernized and made more accessible to the general public. This began with the 1898 Education Proclamation, which was strongly influenced by the British system. Later the Thai education system continued to grow and now the Ministry of Education is responsible for providing public education for Thai children (Sunsite Thailand, 2010).

Presently, education is provided by educational institutions as well as learning centers organized by individuals, families, communities, or private groups, local administration organizations, professional bodies, religious institutions, welfare institutes; and other social institutions (Office of the Permanent Secretary for Education, 2010). The Thai education system consists of 12 years of free basic education: 6 years of primary education and 6 years of secondary education. Enrollment in the basic education system begins at the age of 6. However, all preschool children will be provided with a minimum of a one-year school readiness program. Most young children of this age attend a preschool class attached to primary schools (Office of the Education Council, 2008).

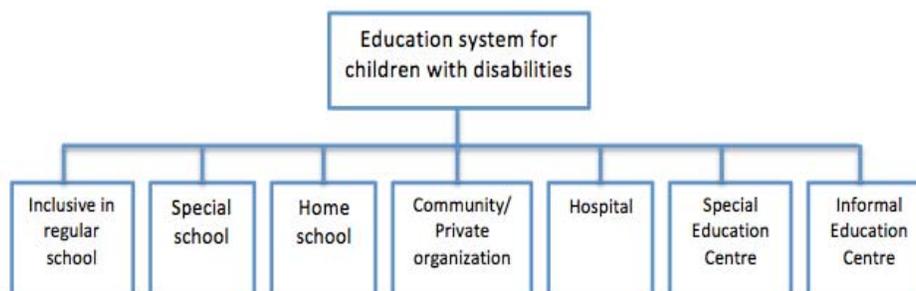
The history of Thai special education has similarities to other Buddhist countries. Children with disabilities were originally seen as a symbol that the family might have committed some sin in the past (Driedger, 1989). Persons with disabilities were considered useless and worthless, with no future. Because of this perception, Thai children with disabilities were kept at home and denied an education. Even with the compulsory educational act in 1935, The Ministry of Education allowed a child to stay at home because of his/her disability condition (Sukbunpant, Shiraishi, & Kuroda, 2004).

In 1939, Genevieve Caulfield, a blind American teacher, provided initial leadership in Thai special education. She was the first person who taught children with visual impairments to live as independent, productive members of society. Caulfield and her friends established the Bangkok School for the Blind,

and the Foundation for the Blind under the patronage of Her Majesty the Queen (Thirajit, 2000). It is believed that special education in Thailand was officially organized from that time.

Since then, special education developed gradually. In 1962, children with visual impairments were first allowed to study in the regular school. Children with hearing impairments were the second group in 1984. Today, each region of Thailand has a special school for students with disabilities. There has been a broad promotion for these children to study with children without disabilities in the regular schools as much as possible. Because of this, since 1995 at least one public school in each of the 76 provinces has a mainstream class for these children (Chonlatanon, 1995). The range of school placements for students with disabilities is shown in Figure 1.

*The Thai education system for children with disabilities*



**Figure 1. Education placement options for Thai children with disabilities**

The Bureau of Special Education Administration, Office of Basic Education Commission is the main agency responsible for the provision of education for children with disabilities. All eligible school aged children with disabilities can be provided with related services such as hearing aids, wheelchairs and communicative electronics devices. Nine different disability categories currently exist; 1) visual impairments, 2) hearing impairments, 3) intellectual disabilities, 4) physical disabilities and health impairments, 5) learning disabilities, 6) language and communication disorder, 7) behavior disorders, 8) autism and, 9) multiple disabilities (Office of the Permanent Secretary for Education, 2008). Children with disabilities study across the Thai educational system along a continuum of placements as indicated in Figure 1 (Sub-committee for Selecting and Classifying the type of disability for Education, 2002).

These options include

1) Inclusive education in the regular school. Children with disabilities attend the school with peers without disabilities, with support from a special education and regular education teacher. There are currently 18,618 inclusive schools, which are assisted by special schools and centers in terms of teacher training, teaching materials, and management systems. When teachers have accumulated their 200 hours training with the centre and passed the examination, the teachers who have the certificate of special education gain a benefit from extra income (around 100 AUD\$/month) when teaching children with disabilities in the classroom. In addition, education coupons (to a minimum of approximately USD\$70 per year) are provided by the Ministry of Education to assist towards the technology and special services needed for students with disabilities (Office of the Permanent Secretary for Education, 2008).

2) Special school for specific disability. These schools operate from kindergarten to high school. There are currently 43 special schools, which are classified into four types to serve student disabilities as follows: (1) Special Schools for those with intellectual disabilities; (2) Special Schools for those with hearing impairments; (3) Special Schools for those with visual impairments and (4) Special Schools for those with physical impairments (Office of the Permanent Secretary for Education, 2008). In practice, however, children with all types of disabilities are accepted in these schools.

3) Home school. Parents can teach their children by registering with the school network or provincial special education centre in order to receive aid and advice.

4) Community or private organization. Community groups or individuals can provide education for children with disabilities by setting up their own special education units (e.g., an early intervention class) through collaboration with a special education centre.

5) Hospital. Hospitals concentrate on supporting children with severe intellectual disabilities, autism, and psychiatric problems. Because of their associated disability conditions, such children are able to study in a hospital with a special education teacher who comes to teach them and connect with their former schools.

6) Special education center. These centers, overseen by the Ministry of Education, provide early intervention services for young children with disabilities and their parents. All Thai provinces have special education centers, which provide early intervention services promoting the child's development, referral system to a regular school, and parent training.

7) Informal educational centers and sheltered workshops. These children and their parents have the right to choose the system best suited for the student. This system is a lifelong learning for them. For example, they can study in the distance-university or train in some short course. The sheltered workshops are provided both school students and students who have left school.

Thai children with disabilities have a chance to join the educational system, in its various forms, from kindergarten to university level. For other child, education is provided in the inclusive setting.

#### *Inclusion in Thailand*

The primary influence of Thai inclusive education policy was from an international community commitment (Table 1). The 1990 Jomtien World Conference on Education for All made it their goal to make primary education accessible to all children and to massively reduce illiteracy before the end of the decade. The Salamanca Statement and Framework for Action on Special Needs Education came out of the World Conference on Special Needs Education in 1994 (Salamanca, Spain). The proclamation stated:

- 1) "Every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning.
- 2) Every child has unique characteristics, interests, abilities, and learning needs.
- 3) Educational systems should be designed and educational programmes implemented to take into account the wide diversity of these characteristics and needs.
- 4) Those with special educational needs must have access to regular schools which should accommodate them within a child-centered pedagogy capable of meeting those needs. (UNESCO, 1994, p. ii)

Both the Jomtien World Conference of 1990, and the Salamanca Statement in 1994 were recognized having a great impact on establishing and developing the Thai inclusive education policy. The foundation was laid in these two events, which led to a huge revolution, which escalated, and gave momentum to the move for inclusion of Thai children with disabilities in the classroom. The rights and opportunities of those children were officially mentioned during these conferences, and fueled the movement of inclusive education in the Kingdom of Thailand.

According to the National Education Act of 1999, the rights of persons with disabilities to education aligned with their rights under the Constitution. Those people with disabilities could have 12 years of free basic education. In addition, they were entitled to other services (based on evaluation) from birth or when they were found to have disabilities. These services included early intervention, educational materials and facilities, flexibility in educational management, and home schooling supported by the government (Ministry of Education, 2002).

The National Educational Act 1999 (section 10, space 2) specified education for any child with a disability in "physical, mental, intellectual, social communication, and learning, or physical disability or cripple or those who were not self-reliance or lack of people to take care of or underprivileged. The government had to manage those people their right in obtaining facilities, service media, and other kinds of educational support (p. 8). Consequently, all individuals with disabilities had the right to an opportunity in obtaining education in basic level (Sub-committee for Selecting and Classifying the Type of Disability for Education, 2002). Therefore, 76 Special Education Centers located in every province were established. These provincial Special Education Centers are responsible for finding children with disabilities, providing them with early intervention, and transferring them to either special or mainstream schools in their local community.

Furthermore, the Thai Government proclaimed the year 1999 as the Year of Education for children with disabilities. The government mandated a movement toward inclusion of students with disabilities in regular education programs (Carter, 2006). According to government policy, there was to be a sign stating "Any disabled person, who wishes to go to school, can do so. posted in front of every school to guarantee the right of education for children with disabilities.

At the beginning of 2008, Thailand passed the first Education for Disabilities Act B.E. 2551. This national law addresses the needs of education from birth or when a child is first diagnosed with a disability. In this act the Individual Educational Plan (IEP) was mentioned for the first time as linked to inclusive education by the law. The educational institute now had a responsibility to provide and update the IEP at least once a year regarding to criteria determined by the announcement of the Thai Ministry of Education (Rajkijjanubaksa, 2008). This Act aimed to support the rights, services, and other resources of persons with disabilities to inclusive education in line with the 1999 National Education Act (Ministry of Education, 2008a).

In order to implement the policy into practice, the project of model schools for inclusion was started by The Ministry of Education in year 2004, with 390 model inclusive schools all around the country. The number of model inclusive schools increased to 2,000 the following year (Office of Basic Education Commission, 2005). The expectation was to increase in 2009-2010 the number of schools to 5,000, in order to serve over 33,000 children with all categories of disabilities. (Ministry of Education, 2008b). It seemed that implementation of Thai inclusive policy was progressing step by step.

The Ministry of Education (2004) provided six types of inclusive classrooms in the regular schools, which allowed for flexibility and suitability to all children with disabilities. Inclusive classrooms lie on a continuum from (1) Full-time inclusive classrooms or full-inclusion, (2) Inclusive classroom with consultant services, (3) Inclusive classroom with teacher outside school services, (4) Inclusive classroom with tutor teacher service, (5) Full-time special classroom where students with disabilities attend special education classrooms for the entire school day, and (6) Part-time special classroom.

In summary, the development of Act and policy, which culminated from a rise in global awareness for children with disabilities, was gradually influencing the implementation of Thai inclusive education. The National Educational Act 1999 and The Ministry of Education designation of 1999 as the "Year of Education for Disabled Persons widened educational opportunities for children with disabilities through the promotion of inclusive education in school settings and the improvement of the quality of life and social awareness of these children in Thai society.

#### *History of US Special Education*

The right to a public education in the United States is not mentioned in the U.S. Constitution; and the 10<sup>th</sup> Amendment to the Constitution states that powers not specifically granted in the Constitution are reserved for each state. Therefore public education in the US is the responsibility of each state (Yell, 2012).

Until the 1950s in the US, many students with disabilities were excluded from attending public schools, and those who did attend often dropped out. The court upheld this practice in *Beattie v. Board of Education* (1919), which ruled to exclude a student with a disability from the general classroom because his presence was harmful to the school's best interests (his physical condition was distracting and nauseating to other students), even though he could do the work and keep up with peers (LaNear & Frattura, 2007). Students with more significant disabilities were institutionalized or remained at home (Pardini, 2002). The Civil Rights movement of the 1950s and 1960s in the United States has ties with changes in educational practices for children with disabilities. The landmark case *Brown v. Board of Education* (1954) challenged the segregation of individuals by race; it was determined that separating children by race in separate schools, without similar resources, was not equal. As a result, parents of students with disabilities also asked why the principles of equal access to education did not apply to their children. The exclusion of students with disabilities because they would not profit from the public education system was challenged in the 1972 court cases *Pennsylvania Association for Retarded Children (PARC) v. Commonwealth of Pennsylvania* and *Mills v. District of Columbia Board of Education*. These cases challenged the exclusion of exceptional children from public schools and the parents prevailed. The students now had access to a school, but would they be ensured educational benefit?

*Board of Education of the Hendrick Hudson Central School District v. Rowley* (1982) addressed this issue. Amy Rowley was a fourth grade student who was deaf. She needed special education and related services to ensure a free, appropriate, public education. After several years with a sign-language interpreter in the classroom, the school terminated this service when it was determined that she was proficient at reading lips. The U.S. Supreme Court determined that Amy was making progress and gaining adequate educational benefit (although the definition of educational benefit has never been clearly defined). The school was no longer required to hire a full-time interpreter (Heward, 2013; LaNear & Frattura, 2007; Yell, 2012). Amy was gaining educational benefit from her program.

The outcomes of these cases would be incorporated into federal legislation, such as the Education for All Handicapped Children Act (EAHCA) of 1975, which would lead, after several reauthorizations and amendments, to the Individuals with Disabilities Education Act (IDEA) of 1990 (Hulett, 2009; Yell, 2012). The provisions of IDEA, or the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 includes the principles of a) zero reject, b) nondiscriminatory evaluation, c) appropriate education, d) least restrictive environment, e) procedural due process, and e) parent and student participation (IDEA, 1990; Turnbull, Turnbull, Wehmeyer, & Shogren, 2013). The No Child Left Behind Act (NCLB) (2001) requires increased accountability by schools to include a) increased parental choice, b) site-based management, c) research-based teaching methods, and d) highly qualified teachers and paraprofessionals in order to receive federal funding (Hill & Hill, 2012; Yell, 2006). NCLB is also under review for reauthorization (Duncan, 2012).

### *Inclusive Education*

As specified by IDEA, students with disabilities are entitled a free, appropriate, public education in the least restrictive environment. For most students, this is the inclusion setting (general education classroom). When an individualized education plan (IEP) is developed for a student with a disability, the IEP team (including teachers, administrators, parents, others who provide related services, and the student when appropriate) determines the least restrictive environment (LRE) for that student. LRE is the setting or placement closest to the general education classroom to the maximum extent appropriate where the student can make satisfactory educational progress in his or her individualized program (Heward, 2013; Yell, 2012). Least restrictive environment can occur across a continuum that includes (from least to most restrictive) a) general education classroom, b) general education classroom with consultation from or with additional instruction/related services from a special educator, c) resource room where the student is pulled out for specialized instruction for part, but not the majority of the day, d) separate classroom where services are provided by a special educator, e) separate school with specially trained staff in a separate facility during the school day, f) residential school where the student receives education and care 24 hours a day, and g) homebound or hospital where services are provided in the home or hospital (Heward, 2013; Yell, 2012).

Inclusion can benefit the student with a disability as well typical peers in the classroom. Parents have both supported and rejected the inclusive setting (Havey, 1999). Supporters of inclusion focus on maintaining the intensity of services required as a separate piece of inclusion. They see inclusion as a right, with the extent of restricted placement being based on the student's need to make educational progress without sacrificing the right to a free, appropriate education as close as possible to that of students without disabilities. Placement should be reexamined on a regular basis as the student makes progress toward educational, behavioral, and social goals. Inclusion fosters collaboration between general and special educators and should include regular training on how to differentiate instruction for all students. Accommodations made for students with disabilities can benefit all students (Heward, 2013). Accommodations can include peer tutoring, structuring the classroom, providing scaffolded assignments, and grading rubrics, which enhance learning for all students. Visual supports help culturally and linguistically diverse students as well as students with disabilities, such as autism spectrum disorder.

There are times when the inclusion setting (or general education classroom) may not be the best placement for a student. The multidisciplinary team must weigh the factors that impact setting and student progress toward goals. When placement in the LRE has been a source of dispute, cases have been decided in the courts. The multi-disciplinary team can examine case outcomes regarding placement as a tool for placement. The most common cases cited when examining placement in the LRE include a) *Roncker v. Walter* (1983), b) *Daniel R.R. v. State Board of Education* (1989), c) *Sacramento City School District v. Rachel H.* (1994) and d) *Hartmann v. Loudoun County Board of Education* (1998).

*Roncker v. Walter* (1983) involved a 9-year-old boy diagnosed with moderate mental retardation. The parents wanted him to have the benefit of contact with peers without disabilities in a general education setting while the school district wanted him placed in a special school. As a result of this case, the *Roncker* portability test to determining the LRE was developed. This test states that if services that are deemed superior are offered in a segregated setting, then the feasibility of having those same services provided in a more inclusive (nonsegregated) setting should be considered. If they can be provided in that setting, than placement in a segregated setting would be inappropriate (Hill & Hill, 2012; Yell, 2012).

The *Daniel R.R. v. State Board of Education* (1989) case of determining the LRE involved a 6-year-old kindergartner with Down syndrome placed in a prekindergarten class in the morning and an early childhood special education setting in the afternoon. The school multi-disciplinary placement team met and decided the prekindergarten class with students without disabilities was inappropriate since the student failed to master any skills, was disruptive and required almost constant attention from staff. The hearing officer agreed with the school and the case went to the district and ultimately circuit court. The court developed a two-part test for determining LRE compliance. It asks a two-part question:

- 1) Can education in the general education (inclusive) classroom with supplementary aids and services be achieved satisfactorily, and,
- 2) If a student is placed in a more restrictive setting, is the student included with students without disabilities to the maximum extent possible?
- 3) If the school passes both parts of the question then the school's IDEA obligation to provide FAPE in the LRE has been met (Yell, 2006).

As a result of *Sacramento City Unified School District Board of Education v. Rachel H.* (1994), the court developed a four-factor test to determine FAPE in the LRE. Rachel, who was diagnosed with moderate mental retardation, was 11-years-old, and up until then had attended several special education programs. Her parents now wanted her to be placed in the general education classroom. In this case, the non-academic benefit of participation in the general education inclusive setting and the student's impact in the classroom were considered as part of determining LRE. The four factors considered in determining the LRE using the *Rachel H.* test include:

- 1) examining the educational benefits of the general education classroom with supplementary aids and services as compared with the educational benefits of the special classroom.
- 2) the nonacademic benefits of interaction with students without disabilities,
- 3) the effect of the student's presence on the teacher and on other students in the classroom, and
- 4) the cost of mainstreaming.

Finally, in *Hartmann v. Loudoun County Board of Education* (1997), focused on an 11-year-old with autism who was in a general education inclusive classroom with a full-time aid. It was determined that he was making no academic progress and his aggressive behavior was extremely disruptive to the class. The multi-disciplinary IEP team proposed that Mark be moved to a more restrictive specialized setting. The parents filed due process citing violations of the mainstreaming provisions of IDEA (Yell, 2012). The case was heard several times, and ended up in the Fourth Circuit court on appeal, where it was determined that mainstreaming is not required when:

- 1) a student with a disability would not receive educational benefit from mainstreaming in a general education class.
- 2) any marginal benefit from mainstreaming would be significantly outweighed by benefits that could feasibly be obtained only in a separate instructional setting.
- 3) the student is a disruptive force in the general education setting.

The multi-disciplinary team will find it useful to consider these precedents to make the best informed decision regarding placement in a least restrictive, most inclusive setting that is best for each individual student. In the case of autism, as exemplified in *Hartmann*, when the student fails to benefit from inclusion with students without disabilities, benefits from a separate setting, and is a disruptive force in the classroom (perhaps because of over stimulation), a more restrictive setting may be the least restrictive environment for that student. The traits of autism and the increase in diagnoses make the likelihood of a case such as *Hartmann* to be heard in the court system, and the decision that a more restrictive setting was the most appropriate placement for Mark.

#### *International Connection*

The histories of Thai and U.S. special education, as well as international initiatives, impacted each other as the evolution of education for students with disabilities and inclusive strategies for educating them

developed in both nations. The U. N. Declaration on Human Rights came thirteen years after Thailand made education compulsory, and the Thailand National Special Education Plan (1995) came on the heels of the World Conference on Special Needs Education (1994). In 1975, the United States passed the Education for All Handicapped Children Act, with Thailand passing the National Education Act in 1999, just as there was a global shift from the medical to the social model for disability. Important events that highlight the changes are included in Table 1.

**Table 1. Important Events Impacting the Evolution of US and Thai Special Education**

Year	United States	Thailand	International
1919	<i>*Beattie v. Board of Education</i> (upheld the exclusion of a student with a physical disability from a public education)		
1935		<b>**Compulsory Education Act</b>	
1939		<b>Bangkok School for the Blind established</b>	
1948			UN Declaration on Human Rights (stated health was a basic human right for all)
1954	<i>*Brown v. Board of Education</i> (civil rights case regarding exclusion of students from public education because of race)		
1962		<b>Inclusion of students with visual impairments in public school</b>	
1972	<i>*PARC V. Pennsylvania</i> (challenged the exclusion of students with disabilities to public education)		
1972	<i>Mills v. District of Columbia Board of Education</i> (challenged the exclusion of exceptional children from Washington, DC public schools)		
1973	<b>**Rehabilitation Act, Section 504</b> (made it illegal for any activity or program receiving federal financial assistance to discriminate against a person with a disability; most schools receive federal funding)		
1975	<b>**Public Law 94-142 Education for All Handicapped Children Act (EAHCA)</b> (would become later become IDEA)		
1984		<b>Children with hearing impairments included in public school</b>	
1990	<b>**Individuals with Disabilities Education Act (IDEA)</b> (includes the right to a free appropriate public education (FAPE) in the least restrictive environment (LRE) with peers without disabilities)		

1990		***World Conference on Education for All took place in Jomtien, Thailand (to make primary education accessible to all children and to massively reduce illiteracy before the end of the decade).
1991	<b>**Rehabilitation Act for Disabled Persons</b>	
1994		**World Conference on Special Needs Education: Access and Quality (Salamanca, Spain)
1995	<b>**National Special Education Plan (to develop education services for children with disabilities)</b>	United Nations Human Rights Council formed
1999	<b>**National Education Act B.E. 2542 and Amendments</b>	Global shift from medical to social model
1999	<b>The Year of Education for Disabled People (to provide inclusion of students with disabilities in regular school)</b>	
2001	*No Child Left Behind Act of 2001 (increased federal funding for public schools as long as schools employ "highly qualified teachers and make adequate yearly progress)	
2002	<b>Second National Education Act B.E. 2545 (2002)(to provide basic education without any exception)</b>	
2004	<b>390 model schools for inclusion established</b>	
2008	<b>**The first Education for Disabilities Act B.E. 2551 (to protect the rights of persons with disabilities to education and to promote inclusive education. First mention of the EP as important to the education process)</b>	

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\*Court Case, \*\*Legislation \*\*\*Conference

### *Autism*

Autism spectrum disorder (ASD) is a developmental disability characterized by deficits in verbal and nonverbal communication, socialization, atypical responses to sensory stimulation, repetitive behavior and/or rigid adherence to rituals, and difficulty accommodating change (American Psychiatric Association, 2000). It is one of 13 disabilities eligible for special education services under the Individuals with Disabilities Education Act (IDEA, 1990) (Table 2).

**Table 2. Disabilities that qualify for Special Education Services in the US and Thailand**

United States	Thailand
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Autism	Autism
Deaf-Blindness	
Developmental Delay (ages 3-9)	
Emotional Disturbance	Behavioral/Emotional/Social Disorder
Hearing Impairment (including deafness)	Hearing Impairments (Deaf/hard of hearing)
Intellectual Disability	Intellectual Disabilities
Multiple Disabilities	Multiple Disabilities
Orthopedic Impairment	
Other Health Impairment	Physical and Health Disabilities
Specific Learning Disability	Learning Disabilities
Speech/Language Impairment	Language and Communication Disorder
Traumatic Brain Injury	
Visual Impairment (includes blindness)	Visual Impairments (Blind and low vision)

In the United States, the incidence of autism spectrum disorder (including autistic disorder, Asperger's disorder, and pervasive developmental disorder-not otherwise specified) is currently 1 in 88 individuals (Centers for Disease Control, 2012). In forty years, the incidence of autism has increased tenfold (Autism Speaks, 2012a). Currently diagnoses of ASDs are determined using Diagnostic and Statistical Manual-Revised (Fourth edition) in the United States (Table 3). Changes to the criteria for the diagnosis of autism are anticipated in 2013 when the Diagnostic and Statistical Manual-Fifth Edition is published (Tables 3-5).

Concerns have been addressed that the DSM-IV-TR criteria have been too broad and that children are being over-diagnosed. Other experts believe the new criteria to be too restrictive, and since Asperger's is no longer listed under the DSM-V, that higher functioning individuals will be overlooked. Regardless of diagnosis (or lack of one), these individuals will still have a need for a continuum of supports and services (Rukovets, 2012).

**Table 3. Current Criteria and Definition of Autism Spectrum Disorder in the DSM-IV**

- A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):
- (1) qualitative impairment in social interaction, as manifested by at least two of the following:
    - (a) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
    - (b) failure to develop peer relationships appropriate to developmental level
    - (c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)
  - (2) qualitative impairments in communication as manifested by at least one of the following:
    - (a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
    - (b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
    - (c) stereotyped and repetitive use of language or idiosyncratic language
    - (d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level
  - (3) restricted, repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
    - (a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
    - (b) apparently inflexible adherence to specific, nonfunctional routines or rituals
    - (c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

- (d) persistent preoccupation with parts of objects
- B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.
- C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.

American Psychiatric Association, 2000, p. 75

**Table 4. Proposed Criteria and Definition of Autism Spectrum Disorder in the DSM-V**

Must meet criteria of A, B, C, and D

- A. Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays, and manifest by all 3 of the following:
- 1) Deficits in social-emotional reciprocity; ranging from abnormal social approach and failure of normal back and forth conversation through reduced sharing of interests, emotions, and affect and response to initiation of social interaction,
  - 2) Deficits in nonverbal communicative behaviors used for social interaction; ranging from poorly integrated verbal and nonverbal communication, through abnormalities in eye contact and body language, or deficits in understanding the use of nonverbal communication, to total lack of facial expression or gestures.
  - 3) Deficits in developing and maintaining relationships, appropriate to developmental level (beyond those of caregivers); ranging from difficulties adjusting behavior to suit different social context through difficulty sharing imaginative play and in making friends to an apparent absence of interest in people.
- B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following:
- 1) Stereotyped or repetitive speech, motor movements, or use of objects; (such as simple motor stereotypies, echolalia, repetitive use of objects, or idiosyncratic phrases)
  - 2) Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change; (such as motoric rituals, insistence on same route or food, repetitive questioning or extreme distress at small changes).
  - 3) Highly restricted, fixated interests that are abnormal in intensity or focus; (such as strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
  - 4) Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment; (such as apparent indifference to pain/heat/cold, adverse response to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects).
- C. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)
- D. Symptoms together limit and impair everyday functioning.

American Psychiatric Association, 2012

**Table 5. Proposed Levels of Support for ASD**

Severity Level	Social Communication	Restricted Interests and Repetitive Behaviors (RRBs)
Level 3 Requiring Very Substantial Support	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning; very limited initiation of social interactions and minimal response to social overtures from others.	Preoccupations, fixated rituals and/or repetitive behaviors markedly interfere with functioning in all spheres. Marked distress when rituals or routines are interrupted; very difficult to redirect from fixated interest or returns to it quickly.
Level 2 Requiring Substantial Support	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions and reduced or	RRBs and/or preoccupations or fixated interests appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress or frustration is apparent

	abnormal response to social overtures by others.	when RRBs are interrupted; difficult to redirect from fixated interest.
Level 1 Requiring Support	Without supports in place, deficits in communication cause cause noticeable impairments. Has difficulty initiating social interactions and demonstrates clear examples of atypical or or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions.	RRBs cause significant significant interference with Functioning on one or more contexts. Resists attempts by others to interrupt RRBs or to be redirected from fixated interest

American Psychiatric Association, 2012

Autism spectrum disorders are prevalent across race, culture, socioeconomic status, and region. Western Europe, Canada, Latin America, Asia, Africa, Korea, and the Middle East, have all reported a rise in the incidence of autism and the challenges associated with accessing care (Global Autism Project, 2011; Grossman & Barrozzo, 2007). In Thailand, the attention of prevalence and the definition of Autism were increasing to Thai society. It was found that 4.4 of 1000 Thai children were prone to have autism, and the prevalence rate has been 9.9 children per 10,000 in the Thai population (Poolsupparit, 2005; Sirwannarangsun, 2003; Warnset, 2008). Children were between 1 to 5 years old at diagnoses, with every four males to one female in Thailand (Warnset, 2008). Even though there were approximately 200,000 children with autism in Thailand, there were only 0.5 % of these children who received treatment (Ministry of Education, 2006).

Currently, Thai Children with autism have been perceived as having a deficiency of physical development, communication, and social interaction with strange behaviors (Jeekratok & Chanchalor, 2012). Piravej and others (2009) found that children with behaviour problems and less effective communication skills were more commonly diagnosed with autism (Ministry of Education, 2002) (Table 2).

#### *Support for children with autism in the classroom in Thailand*

Instruction within the six types of inclusive classrooms for students with autism in the regular schools, along with parallel classrooms in general schools, is provided for children with moderate to severe autism (Tanmanee, 2012). The teacher-to-student with autism ratio in these classrooms is 2:3 or 3:5 per one parallel classroom. Two teachers are responsible for teaching at least three students (Onbun-uea, 2008). Resource rooms also provide support of children with autism in the inclusive class with materials, visual supports, use evidence based teaching strategies such as applied behaviour analysis (ABA), environmental structure, the picture exchange communication system (PECS), story-based interventions, computers with internet access, and CD ROMs for assignments in various subject areas (Warnset, 2008). In addition, education coupons are provided to assist in acquiring needed technology and special services. Each student with a disability is entitled to a coupon of minimum baht 2,000 (US\$ 70) per year which can be exchanged for assistive technology as well as additional services such as occupational therapy and speech therapy (Office of the Permanent Secretary for Education, 2008).

Even though there is much support provided to children with autism in the inclusive class, there exist several obstacles of inclusion for these children. Onbun-uea (2008) argued that there is no specific curriculum for teaching children with autism. Different schools provide teaching strategies and curricula in different ways. Many schools create programs for students with autism adopted from the formal education curriculum.

Several studies found that Thai teachers in inclusive classes lack knowledge in special education, have insufficient training for teaching children with disabilities, and insufficient skills to manage the behavior of children with disabilities (Meechalard, 2003; Onbun-uea & Morrison, 2008; Pisarnsombat, 2000; Rattanosot, 2003; Sorathaworn, 2003; Sukkoon, 2003). One study from Surawattananun (1999) found that school principal in Bangkok agreed that inclusion was beneficial to children with autism in terms of social skills learning; however, those principals lacked knowledge and experiences to develop successful inclusion programs. In a similar vein, Indusuta (2003) found that preschool teachers in an inclusive

school who have prior training or experience with children with autism have insufficient understanding to create assessment and evaluation instruments.

#### *Support for Children with Autism in the Inclusive Classroom in the US*

In the U.S., autism has been considered one of the thirteen separate categories under IDEA since it's reauthorization in 1990 (Hulett, 2009; Vaughn & Boss, 2011; Yell, 2012). As more children are diagnosed with autism spectrum disorder, interventions to support them have been researched and examined for efficacy. The National Autism Center (2009) completed the multi-year National Standards Project to establish standards for effective, research-validated educational and behavioral interventions for children with autism, in order to identify treatments that effectively target the core symptoms of ASD. Many of the established and emerging treatments for autism can benefit all students, especially those who might be culturally and linguistically diverse.

Use of antecedent interventions and structuring the classroom can help students with autism and others to navigate the classroom successfully. Some antecedent interventions include use of behavioral momentum, providing choice, incorporating preferences, prompting and cueing which can subsequently be faded, environmental enrichment, modification of task demands, teaching rules and expectations using specific, observable examples, seating, proximity and adult presence, errorless learning, thematic activities, interspersal of preferred, non-preferred activities, modeling correct demonstration of a task, peer training and peer modeling, graphic organizers, story-based interventions, video modeling, scaffolding assignments, teaching self management, visual prompts and schedules incorporating pictures (National Autism Center, 2009).

#### *Future Tasks and Recommendations*

The history of special education in the United States and Thailand has followed a similar path in many ways. Both countries made compulsory education mandatory. All states within the US had compulsory education laws in place by 1918 (Yell, 2012), and in Thailand by 1935 (Ministry of Education, 2008b). Thailand's progress may have begun later, but both countries continue to move in a positive direction in providing special education services to children with disabilities.

The same can be said of the provision of services for children with ASD. Autism spectrum disorder knows no borders. While overall numbers may differ from country to country, in the US it is currently one in eighty-eight children (CDC, 2012). In Thailand, it is one in 167 (WHO, Regional Office for South-East Asia, 2011). The differences may be in how ASD is diagnosed and in the ability to reach the entire population. Even though there exists differences in diagnoses rates, the number of children diagnosed with autism continues to increase each year. The ratio of boys to girls in both countries remains the same, four boys to every girl, despite the geographic distance between the two countries.

Environmental barriers, lack of accessible transportation, services, and accommodations for individuals with disabilities continues to exist around the globe. In Thailand, monitoring of compliance with disability law and negative attitudes by service providers and society overall toward individuals with disabilities continues to impede change (Cheausuwantavee & Cheausuwantavee, 2012). Societal perceptions hamper enforcement of law, distribution of resources, family involvement, and access to programs for students with disabilities as mandated by law.

One avenue to solve the problem is through teacher training. The applied research focus on interventions and effective outcomes as documented by the National Autism Center (2009) and the Global Autism Public Health Initiative (Autism Speaks, 2012b) should be expanded across the globe (The National Autism Center's National Standards Project (2009) was limited to studies in English). While effective treatments for autism have been documented in the US, this knowledge and training on effective interventions is often not filtered to more rural US schools or outside US borders. Increased collaborations within and between countries to share research, and increase knowledge and expertise are recommended. Research based interventions should be taught and implemented in countries such as Thailand and other nations. Expansion of research regarding effective interventions for ASD globally, as the incidence becomes pandemic in proportion, can help change perceptions of children with disabilities, foster access to education and services, and expand the body of global knowledge regarding all individuals with autism and other disabilities.

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