



A SUMMARY OF THE EVIDENCE ON

INCLUSIVE EDUCATION



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● Introduction

Across the globe, students with disabilities are increasingly educated alongside their non-disabled peers in a practice known as inclusion. Inclusion is prominently featured in a number of international declarations, national laws, and education policies. These policies, coupled with the efforts of advocates for the rights of people with disabilities, have led to a substantial increase in the number of students with disabilities who receive schooling alongside their non-disabled peers.

In this report we sought to identify research that demonstrates the benefits of inclusive education not only for students with disabilities, but especially for students without disabilities, since evidence of benefits for the former is already widely known. This report is the result of a systematic review of 280 studies from 25 countries. Eighty-nine of the studies provide relevant scientific evidence and were synthesized and summarized below.

There is clear and consistent evidence that inclusive educational settings can confer substantial short- and long-term benefits for students with and without disabilities. A large body of research indicates that included students develop stronger skills in reading and mathematics, have higher rates of attendance, are less likely to have behavioral problems, and are more likely to complete secondary school than students who have not been included. As adults, students with disabilities who have been included are more likely to be enrolled in post-secondary education, and to be employed or living independently. Among children with Down syndrome, there is evidence that the amount of time spent with typically developing peers is associated with a range of academic and social benefits, such as improved memory and stronger language and literacy skills.

Including students with disabilities can support improvements in teaching practice that benefit all students. Effectively including a student with a disability requires teachers and school administrators to develop capacities to support the individual strengths and needs of every student, not just those students with disabilities. Research evidence suggests that, in most cases, being educated alongside a student with a disability does not lead to adverse effects for non-disabled children. On the contrary, some research indicates that non-disabled students who are educated in inclusive classrooms hold less prejudicial views and are more accepting of people who are different from themselves.

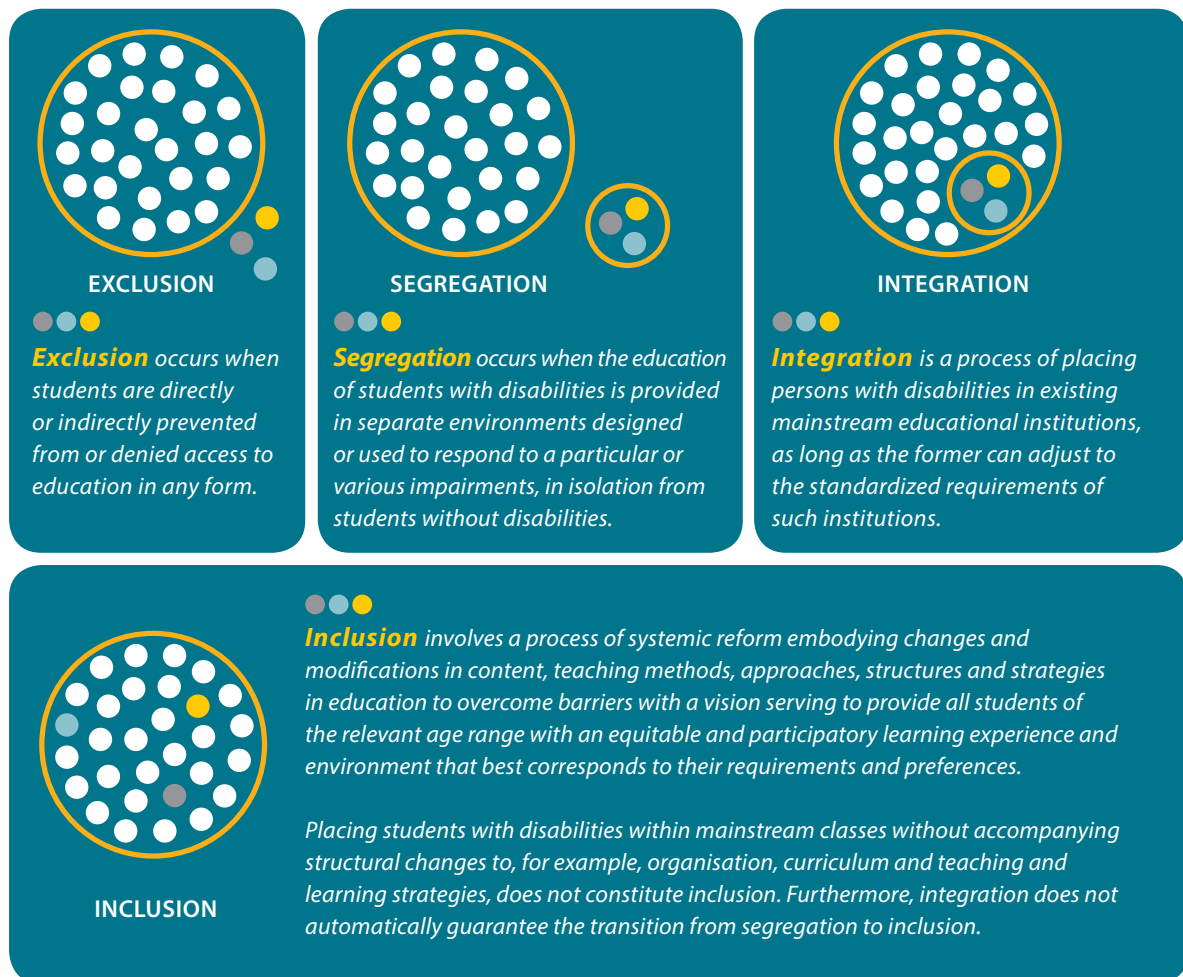
For people without disabilities, the benefits of inclusion extend into the workplace. In a study of Brazilian, Spanish, United States, and Canadian companies and institutions, McKinsey & Company researchers found that employing people with Down syndrome creates a positive impact on a company's work culture and environment, fosters the development of conflict resolution skills, and increases the self-motivation of employees.

Nevertheless, many students with disabilities still struggle to access effective inclusive programs. Long-standing misconceptions regarding the capacities of children with intellectual, physical, sensory, and learning disabilities lead some educators to continue to segregate disabled and non-disabled students.

For the purposes of this study, inclusive education is understood in contrast to other common educational environments for students with disabilities: exclusion, segregation and integration (see graphic).

What is inclusion?

Educational environments for students with disabilities range from a complete denial of formal educational services to equal participation in all aspects of the education system. For this paper, we describe the educational experiences of students with disabilities using the following four categories:



Source: United Nations Committee on the Rights of Persons with Disabilities General Comment No. 4 (<http://www.ohchr.org/Documents/HRBodies/CRPD/GC/RighttoEducation/CRPD-C-GC-4.doc>)

In this report we document evidence on the effectiveness of inclusive education and provide insights into how educators and policy makers might improve the availability of inclusive options for children with disabilities and their families. Although the review includes evidence on all students with disabilities, we focus in particular on evidence relating to the inclusion of children with Down syndrome. We conclude with a discussion of the common challenges for the implementation of inclusive programs and recommendations for public policy makers, practitioners, and parents.

● An International Movement Towards Inclusion

Students with disabilities are increasingly educated alongside their non-disabled peers throughout the world (*World Health Organization, 2011*). The growth of inclusive educational practices stems from increased recognition that students with disabilities thrive when they are, to the greatest extent possible, provided the same educational and social opportunities as non-disabled students. This section describes the development of international and national efforts to support the inclusion of students with disabilities in general education classrooms.

In 1994, The United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Conference on Special Needs Education issued a consensus report on the education of students with disabilities. The resulting Salamanca Statement,¹ signed by representatives of 92 countries and 25 organizations, states that “those with special educational needs must have access to regular schools.” The statement affirms that inclusive regular schools “are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all.” The Salamanca Statement was part of a global movement toward inclusive education and offered guidelines for action at the national, regional, and international levels. The Statement called for governments to promote, plan, finance, and monitor inclusive education programs within their education systems (*UNESCO, 2009*).

In the years since the Salamanca statement, the international community has continued to promote the inclusion of people with disabilities in society. Drafted in 2006, the United Nations Convention on the Rights of Persons with Disabilities (CRPD) binds its 161 signatory states to ensure that “persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live.” Article 24 of the convention requires states to ensure an inclusive education system at all levels for people with disabilities as well as opportunities for life-long learning. Article 24 also stipulates that students with disabilities must not be excluded from general education, that reasonable accommodations and individualized supports must be provided for them, and that people with disabilities should have access to tertiary education, vocational training, and adult education on an equal basis with non-disabled students.

Many countries have developed national policies to support inclusion. In Thailand, legislation such as the National Special Education Plan of 1995 and the National Education Act of 1999 protect the rights of students with disabilities and guarantee access to 12 years of free basic education. As a result of this legislation and nationwide media campaigns, a majority of Thai students with disabilities now attend integrated schools (*UNICEF, 2003*). Nigeria adopted a formal special education policy in 1988, and has since created additional legislation requiring that schools provide inclusive education services to children with disabilities (*Ajuwon, 2008; Tesemma, 2011*). South Africa has developed a long-term plan to promote inclusive education by transitioning students from segregated placements into an integrated system of neighborhood, full-service, and specialized schools (*Department of Education, 2001*).

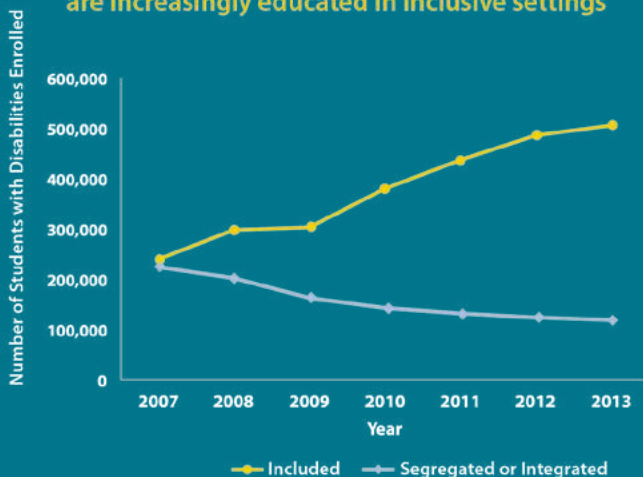
1 Read the Salamanca Statement here: <http://unesdoc.unesco.org/images/0009/000984/098427eo.pdf>

CASE STUDY

BRAZIL: progress on the path to a more inclusive system of education

In 2003, inclusive education became part of the educational agenda in Brazil. Until then, the paradigm was a segregated approach, with separate schools serving only people with disabilities. The development of a more robust inclusive approach to education was formalized in 2008 through the National Policy for Special Education from the Inclusive Perspective. The policy encompasses pedagogic guidelines, teacher training, dissemination of assistive technologies and investments in accessibility, thereby allowing and providing incentives for public schools to enroll students with disabilities. As a result, out of the universe of students with disabilities, enrollment in regular schools grew from 23 percent in 2003 to 81 percent in 2015 (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira, 2014).

Brazilian primary school students with disabilities are increasingly educated in inclusive settings



Source: (Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira, 2014)

Citizens and activists have worked to ensure that the movement toward inclusive education policy continues in Brazil. Disability activists have called for changes in the curricular structures, teaching and learning practices, and administration of both public and private schools. In 2015, the Statute of People with Disabilities (Law 13.146) aligned Brazilian legislation with the Convention on the Rights of Persons with Disabilities, ratified in Brazil under Legislative Decree 186/2008 and Executive Decree 6949/2009. Even with recent developments, many challenges still remain to the implementation of an effective

inclusive education system in Brazil. Brazil has a long history of educational exclusion of people stigmatized for their disability status, race, ethnicity, gender, sexual orientation, or socioeconomic status. Some students with disabilities still face barriers to enrolling in regular schools. Others find only integrationist paradigms in schools that do not operate quality inclusion programs. However, it is important to highlight that most of these barriers do not emerge from a lack of political commitment towards effective inclusion in education, but rather due to the challenges posed by poverty and inequality in a large country like Brazil. According to the United Nations, around 10 percent of the world's population has some type of a disability. This makes people with disabilities the largest minority population in the world.¹ Around 80 percent of people with disabilities live in developing countries. Issues with transportation, adequate health care, understanding of their rights, and other problems related to poverty may impact the number of children and youth with disabilities accessing and persisting in quality education programs.²

The extent of the challenges to full inclusion in Brazil can best be illustrated by the gap between the proportion of people in the general population who have disabilities and the proportion of students enrolled in school who have disabilities. Approximately 10 percent of the population has some sort of disability, but only three percent of students enrolled in early primary grades in Brazil have a disability. The proportion decreases to two percent in the late primary grades and less than one percent in secondary grades (Instituto Unibanco, 2016). These figures suggest that a substantial number of children with disabilities are not identified as having special educational needs and are not being enrolled in formal education, and that many students with disabilities who are enrolled in primary education do not persist through the end of secondary school.

1 For more facts on people with disabilities, see <http://www.un.org/disabilities/convention/facts.shtml>

2 For more facts on people with disabilities in Portuguese, see <https://nacoesunidas.org/acao/pessoas-com-deficiencia/>

In the United States, students with disabilities have enjoyed a nationally-protected right to a “free and appropriate public education in the least restrictive environment” since 1974. Subsequent updates to the laws governing the education of students with and without disabilities have demonstrated a preference for inclusive settings by mandating that children with disabilities be educated in the “least restrictive environment” that is appropriate for their individual needs. There is evidence these policies have spurred an increase in the degree to which children with disabilities are attending class alongside their non-disabled peers. For example, since 1989, the percentage of United States students with intellectual disabilities who spend 40 percent or more of their school day in classrooms with non-disabled peers has grown from 27 percent to 44 percent. In the Netherlands, the rate at which students with Down syndrome were included in mainstream classrooms increased considerably in recent decades, from approximately 1 to 2 percent in 1986 to 37 percent in 2013 (*de Graaf, van Hove, & Haveman, 2014*).

Despite the growing international consensus on inclusion, many students with disabilities around the world continue to face challenges when attempting to enroll in regular schools. Recent research conducted by UNICEF in 13 low- and middle-income countries indicates that children with disabilities account for a disproportionate percentage of children out of school. A 2009 survey of school enrollment in India indicated that despite the near-universal primary school enrollment of students without disabilities, more than one-third of students with disabilities are not enrolled in school of any type. Among Indian children with intellectual disabilities, including children with Down syndrome, it was estimated that nearly half were not enrolled in school (*UNESCO Institute for Statistics & UNICEF, 2015*). Although accurate data are scarce, available information indicates that rates of inclusion vary widely from country to country, even within the same region (*UNESCO Institute for Statistics & UNICEF, 2015*). Within Europe, for example, Cyprus, Lithuania, Malta, Norway, and Portugal educate more than 80 percent of students with disabilities in inclusive settings, while France, Germany, and Belgium continue to educate almost all students with disabilities in separate settings (*European Agency for Development in Special Needs Education, 2010; World Health Organization, 2011*). Even in countries where the rights of students with disabilities to attend school are protected by law, many still face substantial barriers. In some CRPD-signatory nations, students with disabilities are still routinely counseled to enroll in segregated schools or are denied admission to inclusive schools (*Zero Project, 2016*). These data also indicate that in some countries, included students struggle with poorly trained teachers and inaccessible school buildings and curricula.

In brief, countries around the world have pledged to support inclusion for people with disabilities. There has been a substantial expansion in the degree to which students with disabilities attend school alongside their non-disabled peers, but this progress has been uneven. Many countries have enacted policies to promote inclusion, while others have been slow to shift from a segregated education model. Even in countries that have high rates of students with disabilities in the general education classroom, education that is truly inclusive may not be the norm.

● Benefits of Inclusive Education for Non-Disabled Students

Inclusive education can provide a range of academic and social benefits for students with disabilities, such as higher achievement in language and mathematics, improved rates of high school graduation, and more positive relationships with non-disabled students. Nevertheless, many parents and teachers have concerns that the inclusion of students with disabilities might come at the expense of their non-disabled classmates. They may worry that the modifications or accommodations that students with disabilities require in inclusive classrooms will impede the learning of non-disabled students (*Peltier, 1997*). Despite these concerns, research has demonstrated that, for the most part, including students with disabilities in regular education classes does not harm non-disabled students and may even confer some academic and social benefits. Below, we document our review of the available evidence on the impacts of inclusive education on non-disabled students.



Non-disabled students can benefit academically from inclusion

Several recent reviews have found that, in most cases, the impacts on non-disabled students of being educated in an inclusive classroom are either neutral or positive. In 2007, researchers from the University of Manchester systematically reviewed a set of studies that focused on what happens to non-disabled students in inclusive classrooms. Drawing on research from 26 studies conducted in the United States, Australia, Canada, and Ireland, the authors found that the vast majority (81 percent) of study findings indicated that non-disabled students either experienced no effects (58 percent of studies) or experienced positive effects (23 percent of studies) on their academic development as a result of being educated alongside students with disabilities (*Kalambouka, Farrell, Dyson, & Kaplan, 2007*).

A similar review of studies by Ruijs & Peetsma (2009) also found that inclusion was generally associated with either positive or neutral effects on academic outcomes for non-disabled students. In three studies that reported positive outcomes, the researchers noted that teachers employed strategies and teaching techniques which met the needs of diverse learners (*Dessemontet & Bless, 2013*). In all studies, differences between schools were much larger than differences between inclusive and non-inclusive classrooms within those schools. This means that the overall quality of instruction in a school plays a bigger role in shaping the achievement of non-disabled students than whether or not that student was educated alongside children with a disability. Salend & Duhaney (1999) found that typically-developing students in inclusive classrooms received the same level of teacher attention as students in non-inclusive classrooms and had similar levels of academic achievement.

Research from large-scale longitudinal studies in several countries (including the United States, United Kingdom, Canada, and Finland) also suggest that the inclusion of students with disabilities does not lead to negative consequences for typically-developing students. Examining the reading achievement of a nationally-representative sample of 3rd graders in the United States from the Early Childhood Longitudinal Study–Kindergarten Cohort, Gandhi (2007) found no evidence that non-disabled students were harmed by being educated alongside a student with a disability. Similarly, a study by Farrell et al. (2007) of British primary and secondary school students found no substantively meaningful correlation between the proportion of students with disabilities in a school and the academic achievement of that school’s non-disabled students. Research by Friesen, Hickey & Krauth (2010) examining 4th and 7th grade students in British Columbia came to a similar conclusion. They noted that the number of students in a grade with learning and behavioral disabilities was not associated with the numeracy and reading exam scores of non-disabled students. Similar research conducted in the United States state of Texas by Hanushek, Kain, & Rivkin (2002) found that the proportion of students with disabilities in mainstream classrooms was not associated with the academic achievement of non-disabled students. In contrast, a study of around 1,000 primary-school students in the United States state of Indiana found positive impacts of inclusion on the progress of non-disabled students in mathematics (Waldron & Cole, 2000). Fifty-nine percent of non-disabled students in inclusive schools had higher scores on a standardized mathematics exam compared to the previous year, while only 39 percent of non-disabled students in traditional schools made similar progress. Finally, an analysis of three cohorts of all school-leavers in Finland demonstrated no impact of the proportion of students with learning disabilities in a school on the proportion of students who continue into and graduate from upper secondary education (Kirjavainen, Pulkkinen, & Jahnukainen, 2016).

Research focused on the inclusion of students with Down syndrome or other intellectual disabilities yields similar findings. In a study published in 2013, researchers statistically matched more than 400 non-disabled elementary school students in 50 classrooms in Switzerland. Twenty of the classrooms included a student with an intellectual disability, and 30 of the classrooms did not have any students with an intellectual disability. The researchers then followed these students for one year and found that having a classmate with an intellectual disability in their class had no impact on the development of mathematics or literacy skills for non-disabled students (Dessemontet & Bless, 2013).

Critics of inclusion have raised concerns that disruptive behavior from students with severe emotional disabilities may redirect teachers’ attention away from fostering the academic and social growth of all students. Although the majority of the research reviewed for this study indicates that inclusion yields neutral or positive effects on the academic achievement of non-disabled students, there is some evidence that the inclusion of multiple students with diagnosed severe emotional disabilities within a single classroom can present unique challenges for teachers. Drawing on data from a large longitudinal study of young children in the United States, researchers have found evidence that having multiple classmates with a severe emotional disability can have a small negative impact on the reading and mathematics

skills (Fletcher, 2010) and school behavior and approaches to learning skills (Gottfried, 2014) of non-disabled students. The researchers emphasize that these potential small negative effects on non-disabled students were driven by those classrooms in which two or more students with severe emotional and behavioral disabilities were present, and suggest that having one classmate with a disability should not worsen outcomes for non-disabled children. Diagnosed severe emotional and behavioral disabilities are rare. In the United States, students with severe emotional and behavioral disabilities represent less than six percent of students with disabilities and approximately one-half of one percent of all students.² Thus, it is highly unlikely that a given classroom would include two or more students with a severe emotional disability if these students were evenly distributed across classrooms in their natural proportions.



The variation in reported impacts of inclusion on non-disabled students may be attributable to how inclusion was implemented. In many studies, such as those noted in the previous paragraph, “inclusion” is defined as the presence of one or more students with disabilities in classrooms that also include non-disabled students. In other studies, inclusion is defined by teachers’ use of practices that make the curriculum accessible to a wide range of students. A review by Saint-Laurent and colleagues (1998) supports this theory, noting that positive effects were most common in studies where support for students with disabilities in the inclusive classrooms was well-managed through adaptive instruction and the collaborative consultation and cooperative teaching of special and general education teachers.

Other research has highlighted the central role of teaching practice in ensuring that inclusive classrooms provide benefits for all students (Sharma, Forlin, & Loreman, 2008). Teachers with positive attitudes towards inclusion are more likely to adapt the way they work to benefit all of their students (Sharma et al., 2008). Teachers with positive attitudes toward inclusion are also more likely to influence their colleagues in positive ways to support inclusion, encouraging collaboration and sharing classroom management skills (Sharma et al., 2008). In an Australian study involving six primary and high school classrooms, researchers found that teacher attitudes were crucial to effective inclusive practice (Carlson, Hemmings, Wurf, & Reupert, 2012). In the study, they suggest that the inclusive attitudes of the teachers towards supporting students with a range of learning needs created the conditions necessary within the schools to foster inclusion in practice, which in turn resulted in more inclusive attitudes of other teachers, school educators, parents and students.

Teacher training can also help to ensure that inclusive programs benefit all students (Sharma et al., 2008). Research suggests a positive correlation between the amount of disability education or teacher training and positive attitudes towards inclusion. Teacher training and appropriate

2 For more information on the number and percentage of students with different types of disabilities in the United States, see <https://nces.ed.gov/FastFacts/display.asp?id=64>

interventions can also reduce externalizing behavior that negatively impacts other students. Gottfried (2014) found that more experienced teachers and those with greater training in the education of students with disabilities were more able to mitigate any negative impacts of students with disabilities on the behavioral outcomes of their peers. Coordinated schoolwide approaches to the behavior of disabled and non-disabled students can also support the inclusion of students with challenging behaviors.

Although trainings can help provide teachers with specific instructional strategies, many teachers suggest that they do not have the necessary time and resources to effectively include students with disabilities (Chiner & Cardona, 2013; Curcic, 2009; Oswald & Swart, 2011; Woolfson & Brady, 2009). Concerns regarding resources have been noted in surveys of teachers in Hong Kong (Stella, Forlin, & Lan, 2007), South Africa (Oswald & Swart, 2011), Ghana (Alhassan, 2014), and Spain (Chiner & Cardona, 2013). Indeed, providing targeted support for students with disabilities within a general education classroom can require additional time from teachers. For some students with disabilities, inclusion in a general education classroom requires adaptive technologies or modifications to the curriculum. Successful inclusive schools often identify multiple sources of funding to provide these additional supports. For example, the principal of the Clarisse Fecury School in Rio Branco, Acre, Brazil, identified and mobilized resources from the State Secretary of Health, the Special Education Management System, and several support centers specializing in specific disabilities (Hübner Mendes & de Macedo, 2011).

Though finances matter, implementing inclusive education is not exclusively a matter of additional financial resources (Curcic, 2009). Effective inclusive education requires teachers and other educational professionals to regularly engage in collaborative problem solving. Through whole school collaboration, school staff can share ideas and strategies to address the specific challenges faced by individual students with and without disabilities (Carter & Hughes, 2006). Teachers and other school staff work together to devise classroom-based interventions that can increase a student's chances for success (Bouillet, 2013). This collaboration may involve interactions between classroom teachers, speech and language specialists, school psychologists and the principal, who all work together meet the needs of each individual student, dividing time and sharing resources.

Research suggests that it is through the development of this culture of collaborative problem solving that the inclusion of students with disabilities can serve as a catalyst for school-wide improvement and yield benefits for non-disabled students (Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Hehir & Katzman, 2012). In effective inclusive schools, the traditional isolated classroom is replaced with more a flexible structure that facilitates collaboration across school staff. This permits educators to develop coordinated approaches focused on addressing the specific needs of individual students. The skills these educators develop to support students with disabilities help them to better address the unique needs of all of their students.

BOSTON: Effective inclusive schools support excellence for all students

An in-depth study of inclusive schools in Boston, Massachusetts demonstrates that schools can be both inclusive and high-performing. When schools make inclusion part of their central mission, teachers work together to raise student achievement by continually improving their instruction and supporting the individual learning needs of each student. In this study, researchers followed three public schools for two school years. They conducted interviews with teachers, students and administrators, observed classes and school events, and reviewed three years of testing data. These schools were selected for the study because of their explicit commitment to helping all students with and without disabilities meet high academic standards.

Teachers in these effective inclusive schools describe the inclusion of children with disabilities in the same way they might describe the inclusion of students from varying racial, ethnic, and linguistic backgrounds. One elementary school teacher noted, "We, the collective we, value diversity in everything; not just cultural diversity or racial diversity, but diversity in how we learn and diversity in economic factors." As a result, inclusion is viewed as part of a larger mission, and this mission shapes all aspects of the school culture. School staff approach the inclusion of students with disabilities as an opportunity to effectively meet the diverse needs of all students through individualized and innovative teaching practices. Teachers view the challenges associated with teaching students with disabilities as a chance to strengthen their teaching practice and improve the achievement of all students, regardless of their disabilities or abilities.

To do this, these schools function as collaborative problem-solving organizations. Rather than operating in isolation, teachers and school staff work together to customize programs for individual students. This collective problem-solving fosters a culture of innovation and improvement in which teachers are continually striving to serve the changing needs of all students. One teacher described her school as, "a place where people are always thinking of another way to do things, rather than saying, 'But this is the curriculum. That's how we have to do it'... The teachers [here] are being more creative." Literacy instruction at the Boston Arts Academy (BAA), a public high school for the visual and performing arts, provides an example of this

type of creative problem solving. Students enrolled in BAA are selected based solely on arts ability, so students frequently exhibit specialized learning needs due to disabilities like dyslexia or deafness. Teachers and school leaders have responded to this challenge by instituting a comprehensive approach to literacy instruction in which all teachers are expected to be teachers of reading and writing. Incoming students take a comprehensive diagnostic reading assessment and are given the appropriate supports for their learning needs, like summer enrichment, tutoring, or text-to-speech software.

This attitude toward teaching and learning has had a direct impact on student achievement. Students at Boston Arts Academy have consistently performed well on the Massachusetts Comprehensive Assessment System (MCAS), a statewide standardized test. For example, the average English MCAS Language Arts Score among 10th grade students at Boston Arts Academy was a 92 in 2005, which was higher than both the state (89) and city (73) average. A similar pattern emerged in 4th grade language arts and mathematics in the other two schools selected for the study, the Patrick O'Hearn¹ and the Samuel W. Mason elementary schools. At the Samuel W. Mason elementary school, the average MCAS Language Arts score in 2005 (92) was higher than the city (73) and state (90). The Samuel W. Mason school also outperformed city (68) and state (84) averages in mathematics with an average score of 86 on the MCAS in 2005. At the Patrick O'Hearn school, the average Language Arts score in 2005 (80) was higher than the city average (73), but lower than the state average (90). In mathematics, the average MCAS score for Patrick O'Hearn school (78) was also higher than the Boston average (68), but lower than the state average (84). Factors such as strong leadership and parent involvement also contribute to the academic success of these three schools, but their inclusive approach has undoubtedly strengthened teaching practices and raised expectations for student achievement. As these schools demonstrate, including students with disabilities need not come at the expense of academic rigor or high achievement. When implemented deliberately and purposely, inclusion can support high levels of achievement for all students.

¹ The Patrick O'Hearn Elementary School is now called the William W. Henderson Inclusion Elementary School.

Inclusion can support the social and emotional development of non-disabled students

Attending class alongside a student with a disability can yield positive impacts on the social attitudes and beliefs of non-disabled students. A literature review describes five benefits of inclusion for non-disabled students: reduced fear of human differences, accompanied by increased comfort and awareness (less fear of people who look or behave differently); growth in social cognition (increased tolerance of others, more effective communication with all peers); improvements in self-concept (increased self-esteem, perceived status, and sense of belonging); development of personal moral and ethical principles (less prejudice, higher responsiveness to the needs of others); and warm and caring friendships (*Staub & Peck, 1995*). These changes in attitude are predicted by the Contact Hypothesis, a term referring to the reduction of hostility, prejudice, and discrimination between groups (e.g. non-disabled versus disabled) through increased inter-group contact (*Allport, 1979*).³ Inclusive classrooms provide many of the conditions necessary for reducing discrimination under the Contact Hypothesis, which include 1) group members having equal status, 2) cooperation in pursue of common goals, 3) fostering the development of close personal relationships, and 4) institutional support (*Allport, 1979*).

Bunch & Valeo (2004) conducted detailed interviews with dozens of non-disabled Canadian students and found that students in inclusive schools had more friendships with students with disabilities and were more likely to support inclusion when compared to students in non-inclusive schools. Few of the students in non-inclusive schools were friends with students with disabilities, while all of the elementary students in the inclusive schools were friends with students with disabilities. The researchers suggest the difference is due to simple routine contact between students with and without disabilities in the inclusive schools. One middle school student in an inclusive school said of her classmate with a disability, “Because she’s with us, so we consider her as our friend, and she considers us as her friends.” Regarding support for inclusion, the researchers theorized that students are more likely to accept the situation with which they are familiar; if inclusion is the norm, they are likely to support it, and if separate placement is the norm, they are likely to accept it. They also found less peer abuse (teasing, insults, social rejection) of students with disabilities in inclusive schools, possibly because students in inclusive schools were more likely to stand up for their peers with disabilities.

In another study, researchers examined 80 non-disabled primary school students in Italy and found that those who had contact with students with Down syndrome held more positive and less prejudicial views about people with Down syndrome when compared to students who had not had such contact (*Consiglio, Guarnera, & Magnano, 2015*). A 2008 study of 6th to 8th grade students in Chile found that non-disabled students attending inclusive schools demonstrated less prejudice, patronizing, or pitying behaviors toward students with Down syndrome when compared to students attending non-inclusive schools (*Sirlopú et al., 2008*). The authors concluded that inclusive schools have the potential to change negative attitudes (e.g. pitying

3 The Contact Hypothesis was originally conceived to describe racial/ethnic discrimination and integration, but the framework has since been applied to other traditionally marginalized groups (LGBTQ, physically disabled, mentally disabled, mentally ill, elderly) (Pettigrew & Tropp, 2006).

and intergroup anxiety) and promote positive relationships between students with Down syndrome and their non-disabled peers. Peers attending inclusive schools also expressed more positive attitudes towards children with intellectual disabilities. In a study examining 256 children ages 9 to 10 in Greece, students attending inclusive schools selected significantly fewer negative adjectives to describe children with intellectual disabilities when compared to non-disabled students in non-inclusive settings (Georgiadi, Kalyva, Kourkoutas, & Tsakiris, 2012).



● Benefits of Inclusive Education for Students with Disabilities

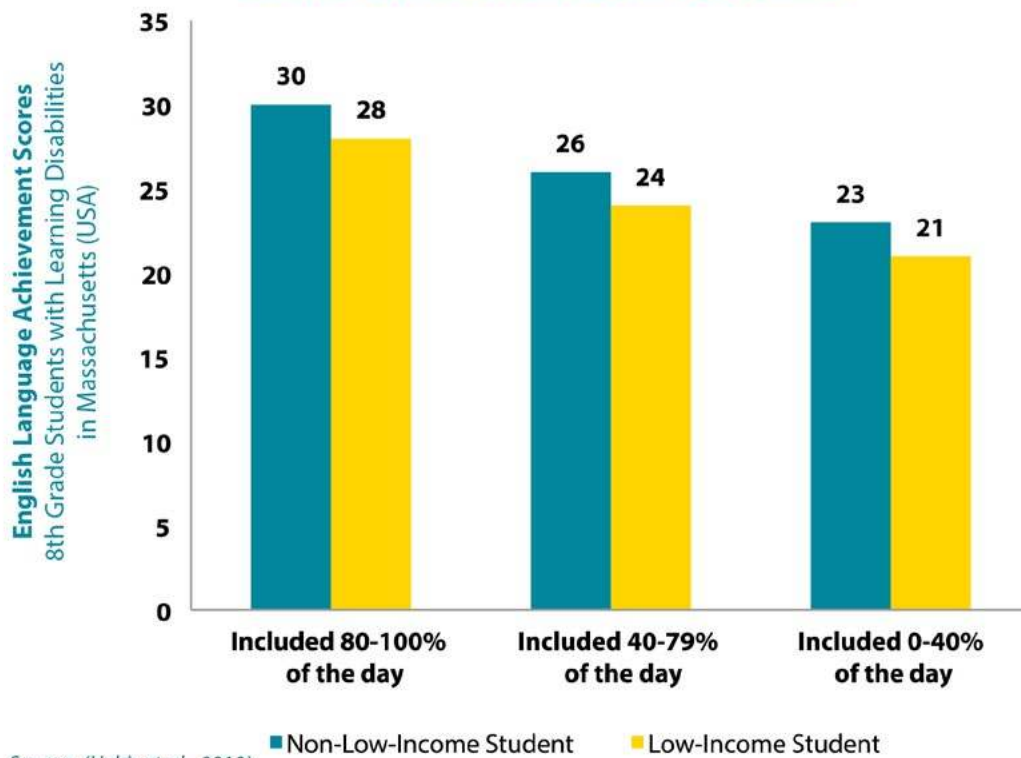
Decades of research indicate that educating students with disabilities in inclusive settings can yield a range of academic and social benefits for those students. The first subsection of this section describes the academic benefits of inclusion for students with a variety of disabilities, and the second subsection describes the academic benefits of inclusion for students with Down syndrome and other intellectual disabilities in particular. The last subsection summarizes the social benefits of inclusion for students with disabilities.

Included students with disabilities academically outperform segregated students

There is strong evidence that students with disabilities benefit academically from inclusive education. The academic impacts of inclusion have been studied in many ways with many different populations of students around the world. Multiple systematic reviews of the scholarly research literature indicate that students with disabilities who were educated in general education classes academically outperformed their peers who had been educated in segregated settings (Baker, Wang, & Walberg, 1995; Katz & Mirenda, 2002). This subsection begins with a description of studies conducted in the United States and ends with evidence from international studies.

A 2012 study by Hehir and colleagues examined the performance of more than 68,000 primary and secondary school students with disabilities in the United States state of Massachusetts. Using state test data, the authors identified many factors that influence the academic achievement of students. Family income, school quality, and proficiency with English were all related to a child's academic performance. After statistically controlling for these factors, the authors found that on average, students with disabilities who spent a larger proportion of their school day with their non-disabled peers performed significantly better on measures of language and mathematics than students with similar disabilities who spent a smaller proportion of their school day with their non-disabled peers (Hehir, Grindal, &

Students with disabilities who spend more of their school day in inclusive settings earn higher scores on tests of language ability



Source: (Hehir et al., 2012)

Eidelman, 2012) (see graphic above). Children with disabilities also benefit from being included in prekindergarten programs. A study of 757 three and four year-old students in the Midwestern United States found that the language skills of students with disabilities benefit substantially from having the opportunity to attend preschool with non-disabled students (Justice, Logan, Lin, & Kaderavek, 2014).

Two large longitudinal studies of students with disabilities in the United States provide evidence that participating in inclusive education can yield positive impacts on students' academic outcomes. The Special Education Elementary Longitudinal Study (SEELS) followed 512 students with disabilities from elementary to middle school and from middle to high school from 2000 to 2006 (Wagner, Kutash, Duchnowski, & Epstein, 2005). Study data indicate that students with disabilities who took more classes in general education settings had better reading comprehension and a higher level of performance on tests of mathematical skills when compared to segregated students. Among students with an intellectual disability, included students also read 23 to 43 words per minute faster than otherwise similar students who took fewer academic classes (Blackorby et al., 2007).

A similar study focused on teenage students with disabilities, the National Longitudinal Transition Study (NLTS), followed 11,270 13 to 16 year old United States students over ten years⁴. This study found that students with disabilities who took more academic classes in general education settings experienced greater growth on measures of academic skills than peers who spent more time in separate special education programs. Analyses of these data

4 For additional details regarding the National Longitudinal Transition Study, see <http://www.nlts2.org/>

also showed that students with disabilities in inclusive settings attended school an average of three more days per year, were eight percentage points less likely to receive a disciplinary referral, and were four percentage points more likely to belong to school groups (Marder, Wagner, & Sumi, 2003; Newman, Davies, & Marder, 2003).

Inclusive education can also support a student's academic attainment—the number of years of education an individual has completed. A recent study from Harvard lecturer Laura Schifter used advanced statistical methods to examine the graduation patterns of students with disabilities in the United States state of Massachusetts and found that students with disabilities in fully inclusive placements were almost five times more likely to graduate on time than students in segregated settings (Schifter, 2015). The benefits of inclusion can even extend beyond high school. A study of more than 400

students with an intellectual disability⁵ or multiple disabilities in the United States found that included students were nearly twice as likely as their non-included peers to enroll in some form of post-secondary education (Baer, Daviso, Flexer, Queen, & Meindl, 2011). Another study using data from NLTS indicated that following high school, included students were 11 percentage points more likely to be employed and earned approximately \$2,100 more per year (in 1990 United States dollars) when compared to otherwise similar students who spent 50 percent or less of their school time in general education (Wagner, Blackorby, Cameto, & Newman, 1993).⁶ Included students with mild disabilities (learning disabilities, serious emotional disturbances, speech impairments, and mild intellectual disabilities) were 10 percentage points more likely to live independently than otherwise similar students who spent 50 percent or less of their school time in general education (see graphic on page 16).

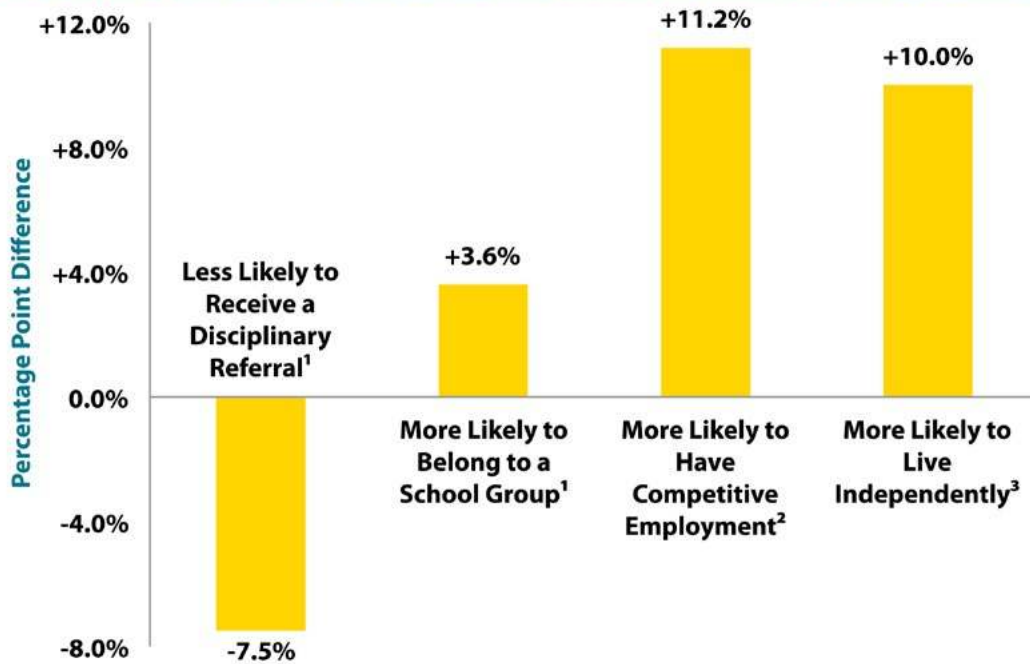
The evidence noting the academic benefits of inclusive education is not limited to the United States. Researchers in Norway followed nearly 500 secondary school students with disabilities over six years. Controlling for multiple other factors related to student achievement, they found that included students were more than 75 percent more likely to earn a vocational or academic credential than students who were educated in special classes (Myklebust, 2007). A study conducted in the Netherlands compared the development of more than 200 matched pairs of 7 and 8 year old students with learning and behavioral difficulties or mild intellectual disability who were included in general and special education schools. The researchers then followed these pairs of students for four years and found that the included students made substantially greater academic progress than did their counterparts in special education programs (Peetsma, Vergeer, Roeleveld, & Karsten, 2001).



5 Some of the sources reviewed in this evidence summary use the derogatory term “mental retardation.” We substitute all references to “mental retardation” with “intellectual disabilities,” a preferred term.

6 Significant differences in employment and earnings are driven by large differences for students with sensory and physical disabilities. See (Wagner, Blackorby, Cameto, & Newman, 1993) for details.

The benefits of inclusion for students with disabilities extend beyond academics



Source: (Marder et al., 2003; Wagner et al., 1993)

- 1 Difference between students with disabilities who spent 75% of the school day in general education classrooms and students with disabilities who spent 25% of the school day in general education classrooms.
- 2 Difference between students with disabilities who spent 100% of the school day in general education classrooms and students with disabilities who spent 50% of the school day in general education classrooms.
- 3 Difference between students with mild disabilities who spent 100% of the school day in general education classrooms and students with mild disabilities who spent 50% of the school day in general education classrooms. Mild disabilities include learning disabilities, serious emotional disturbances, speech impairments, and mild intellectual disabilities.

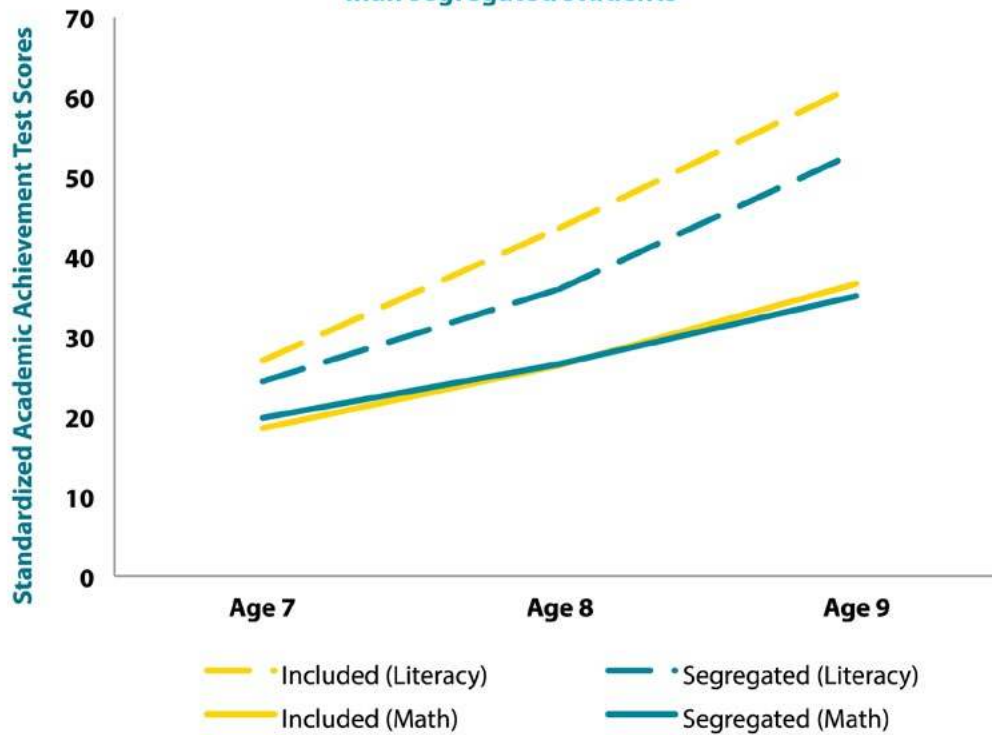
Students with Down syndrome benefit academically from inclusion

Researchers have documented similar evidence that inclusion yields academic benefits for students with intellectual disabilities in general and students with Down syndrome specifically. Among students with intellectual disabilities, such as students with Down syndrome, inclusive education has been repeatedly shown to support academic development, particularly in the areas of language and literacy (*de Graaf & van Hove, 2015; Turner, Alborz, & Gayle, 2008*). A 2000 review of the scholarly literature found that integrated students perform better than their comparable segregated counterparts and concluded that available research supports the inclusion of children with intellectual disabilities in general education settings (*Freeman & Alkin, 2000*).

There is evidence that inclusive education is particularly beneficial for the development of language and literacy skills among students with Down syndrome. Researchers in Switzerland identified a group of 68 children who were similar in almost every way. They were the same age (between seven and eight years old), had been diagnosed with an intellectual disability, lived at home with their parents, and had similar scores on tests of reading and mathematics skills. The main way in which these students differed was that one group of students was

included while the other was educated in separate schools. Researchers then followed these students for two years and found that across the two groups, students experienced similar growth in their mathematical skills, but included students experienced significantly greater growth in the development of literacy skills than did their otherwise similar peers (Dessementet, Bless, & Morin, 2012) (see graphic below).

Students with Down syndrome who are included develop stronger literacy skills than segregated students



Source: (Dessementet, Bless, & Morin, 2012)

Other studies confirm that these inclusion-related language and literacy differences can be substantial. Researchers in the United Kingdom identified 46 teenagers with Down syndrome and examined their academic and social outcomes. These students had similar family characteristics and similar levels of cognitive abilities at school entry but were sorted into either inclusive or separate special education schools on the basis of where they lived. Those students who had been included outperformed their segregated peers on measures of academic development. The researchers estimated that when compared to the students in segregated programs, included students were approximately two and a half years ahead on measures of expressive language and more than three years ahead in reading, writing, and literacy skills (Buckley, Bird, Sacks, & Archer, 2006).

Multiple studies conducted in the Netherlands have also found that inclusion is associated with improvements in the development of academic skills for children with Down syndrome (de Graaf & van Hove, 2015; de Graaf, van Hove, & Haveman, 2013). One study collected information on the reading, writing, mathematics, and language skills, parental education level, and home environment of a random sample of 160 children with Down syndrome in 2006. They then

collected similar information four years later and found that the amount of time a student with Down syndrome spent in mainstream classes was a significant predictor of the child's academic skill development, with particularly strong effects on the reading ability of younger children.

There is also some evidence that inclusion is related to improvements in memory skills in students with Down syndrome. Memory can be particularly challenging for children with Down syndrome, and evidence of a linkage between inclusion and memory skills highlights how inclusive environments may provide greater cognitive growth opportunities. In one study conducted in the United Kingdom, researchers examined the language and memory development of 44 children with Down syndrome attending mainstream and specialized schools. Children in the mainstream group had significantly higher scores in language comprehension and short-term memory (grammar comprehension, auditory digit span, and visual digit span) when compared with children attending specialized schools. The children in mainstream schools were one and a half years ahead of their peers in specialized schools in vocabulary development and nine months ahead in grammar comprehension. The authors concluded that mainstream educational environments may provide children with Down syndrome greater exposure to language and academic instruction, which facilitates both language and memory growth (*Laws, Byrne, & Buckley, 2000*).

Inclusion can support the social and emotional development of students with disabilities

There is also evidence that participating in inclusive settings can yield social and emotional benefits for students with disabilities. Such social and emotional benefits can include forming and maintaining positive peer relationships, which have important implications for a child's learning and psychological development. Research suggests that students with disabilities often struggle to develop peer relationships (*Bossaert, Boer, Frostad, Pijl, & Petry, 2015*).

A recent study examined more than 1,100 Austrian primary and secondary school students and found that, when compared to non-disabled students, students with disabilities had fewer friendships or social interactions, lower levels of perceived peer acceptance, and diminished self-perception of social participation (*Schwab, 2015*).

Inclusion may help to support social skill development among students with disabilities (*Schwab, 2015*). A 2002 review of the scholarly literature indicates that students with developmental disabilities in inclusive classrooms demonstrated higher levels of engaged behavior than did students with developmental disabilities in special education classrooms (*Katz & Mirenda, 2002*). In a study of students with learning disabilities in Canada, researchers found that students who were educated primarily in a mainstream setting (in an inclusive classroom either with or without additional in-class supports) were more accepted by their peers, had better social relationships, were less lonely, and exhibited fewer behavioral problems than similar children who were educated in resource room or self-contained special education classroom settings (*Wiener & Tardif, 2004*).

Research on United States students utilizing data from the NLTS and SEELS studies also indicates that spending time in inclusive settings is associated with better social skills for

students with disabilities (Marder et al., 2003; Newman & Davies-Mercier, 2005; Sumi, Marder, & Wagner, 2005). NLTS data indicate that students who spent three-quarters of their day or more in general education classes were four percentage points more likely to belong to school or community groups than students who spent less time in general education classes. Included students were also eight percentage points less likely to receive disciplinary action at school than students who spent less time in general education classes (Marder et al., 2003). Researchers examining SEELS data found that students with disabilities in mainstream placements demonstrate more independence and self-sufficiency (Newman & Davies-Mercier, 2005; Sumi et al., 2005). For example, 34 percent of students with disabilities who were included in general education classes reported that they were likely to do things on their own “usually” or “very often,” compared to 22 percent of students who were educated in special education classes (Newman & Davies-Mercier, 2005).



● Considerations in Implementing Inclusive Education

Implementing effective inclusive education may require teachers and principals to rethink many longstanding approaches to instruction. There are some common considerations schools and teachers must address when working to include students with disabilities. Teacher attitudes and training must be considered, along with the administrative structure of the school. Below we outline the evidence on these considerations and how they can be addressed.

Teacher attitudes and expectations

Evidence from multiple countries suggests that teachers generally support the concept of inclusive education but question their own ability to teach in an inclusive classroom (Chiner & Cardona, 2013). For example, two surveys in Spain found that although teachers approved of inclusion in theory, few were willing to include students with disabilities in their own classrooms (Cardona, 2000; Fernández, 1999). Many teachers attribute their hesitation to include students with disabilities to a lack of proper training. A large study conducted in the United States indicates that around one-fifth of general education teachers who teach students with disabilities report that they do not have adequate support, and one-third feel that they were not adequately trained to support students with disabilities in their classrooms (Blackorby et al., 2004). Similarly, teachers in Scotland cited their lack of training and support as a barrier to their practice of inclusion, even if they felt favorably towards inclusion as a theory and practice (Woolfson & Brady, 2009).

It follows then that providing training for teachers can influence teachers' attitudes towards inclusion. Multiple studies have found that teachers who have received training on inclusion are more likely to have positive attitudes towards the inclusion of students with disabilities (*Chiner & Cardona, 2013; Sharma et al., 2008*). For example, research conducted in South Africa regarding barriers to inclusion highlighted teachers' concerns with the challenges presented by increasing student diversity in the classroom. Teachers remarked that they lacked adequate knowledge, facilities, skills, and trainings. These concerns shaped teachers' perceptions of inclusion. After receiving training, teachers felt more positively about including students with disabilities. Pre-test and post-test scores showed that teachers who participated in the study increased their teaching skills and knowledge of inclusive education (*Oswald & Swart, 2011*). Similarly, a study of teachers in Uganda found that those who had some form of training in inclusive education held more positive and willing attitudes towards inclusion than those without any form of training in inclusion (*Ojok & Wormnæs, 2013*).

There is some evidence that students with disabilities who are educated alongside their non-disabled peers are subject to higher expectations from teachers compared to students educated in separate settings. In a seminal study conducted in the United States, researchers examined how the quality of the individualized education plans (IEPs) for students with disabilities changed when they left special education classrooms and entered inclusive classrooms. An IEP is a written document used in the United States outlining a student's unique learning needs, the services they require, and how their progress will be measured in the classroom. The researchers analyzed the content of the IEPs associated with general education versus special education classes from the students who had made a transition from special to general education. The results showed a significant increase in the quality and expectations of the IEP objectives that were written for students with disabilities once they were placed in inclusive settings (*Hunt & Farron-Davis, 1992*).

Effective inclusion of students with Down syndrome

Children with Down syndrome exhibit common strengths that facilitate their inclusion in mainstream classrooms. Research indicates that children with Down syndrome are strong visual and social learners, particularly through observation and imitation (*Hughes, 2006*). They respond well to praise and rewards, rather than to punishment, and do not exhibit any behavior issues unique to Down syndrome (*Alton, 1998; Wolpert, 2001*). When teachers are asked to describe a single personality characteristic most typical of children with Down syndrome, common answers include "affectionate," "happy," and "friendly" (*Gilmore, Campbell, & Cuskelly, 2003*). Any behavioral problems observed in children with Down syndrome mirror those seen in children without Down syndrome (*Alton, 1998*).

Yet children with Down syndrome do exhibit some common learning challenges. These include challenges with short-term auditory memory (i.e. learning from listening) and speech and language. Children with Down syndrome sometimes struggle in learning new words, learning grammar and syntax, and following complex verbal instructions or stories (*Alton, 1998*). As a result, teachers in inclusive classrooms suggest that the most effective learning

materials for Down syndrome children include “hands-on” materials and computer-assisted technology rather than worksheets or textbooks (*Wolpert, 2001*). Teachers may also choose to provide visual instructions or timetables and reinforce all curricula visually (e.g. presenting a word in print alongside a picture to increase vocabulary) (*Alton, 1998*).

Although inclusive settings provide students with Down syndrome the opportunity to develop friendships with non-disabled peers, some research suggests that students with intellectual disabilities can sometimes struggle to develop strong social bonds within an inclusive setting (*Buckley et al., 2006; Freeman & Alkin, 2000; Szumski & Karwowski, 2014*). Differences in emotional maturity and intellectual ability can interfere with the formation of reciprocal friendships between children with Down syndrome and their non-disabled peers (*Cuckle & Wilson, 2002; Fox, Farrell, & Davis, 2004*). Genuine friendships between children with Down syndrome and their non-disabled peers often develop through shared interests and class-based activities (*Fox et al., 2004*). Children with Down syndrome may have interests more similar to those of younger children, and parents often hesitate to provide increasing levels of independence to adolescents with Down syndrome (*Cuckle & Wilson, 2002*). Consequently, friendships between children with Down syndrome and their non-disabled peers are often “compartmentalized,” meaning that they are restricted to one setting (i.e. school) and do not extend into other settings (i.e. home and community) (*Cuckle & Wilson, 2002*).

Schools can facilitate interactions between students with and without Down syndrome using a variety of approaches. In research done by a group of Scandinavian researchers, teachers took an active role in promoting interaction between non-disabled children and children with Down syndrome. Small groups, in which peers were expected to help each other and the child with Down syndrome, served as a primary means for facilitating peer interaction (*Dolva, Gustavsson, Borell, & Hemmingsson, 2011*). Teachers educated peers about the nature of disabilities like Down syndrome and instructed them how to behave supportively in these group settings. Teaching staff also helped students with Down syndrome interpret social situations and initiate interactions with non-disabled students (*Dolva et al., 2011*). Teachers may also choose to create formalized peer-buddy or friendship groups with non-disabled peers. Schools can partner with nonprofit organizations such as Best Buddies, which fosters one-on-one friendships between people with and without intellectual and developmental disabilities in more than 50 countries. Evidence on the effectiveness of such programs is limited, but preliminary research indicates that structured social programs may benefit children with Down syndrome and other intellectual disabilities (*Barrett & Randall, 2004; Carter, Hughes, Guth, & Copeland, 2005; D’Haem, 2008*).

The fact that forming strong relationships can be difficult in a general education classroom should not necessarily be interpreted as meaning these settings are not socially appropriate for students with disabilities. Rather, it suggests that teachers and schools must pay attention to the psychosocial development of students with disabilities in general education settings and general education teachers need improved training and resources in order to create effective, inclusive learning environments that foster both the academic and social growth of students with disabilities.

● A Coordinated National Approach to Fostering Inclusion

A national effort to promote a more inclusive system of education requires coordinated efforts that work from the “top down” and the “bottom up.” That is, policy at the highest levels must affirm the right of children with disabilities to be included alongside their non-disabled peers in education. Although policy is critical, the long-standing misconceptions regarding the capacities of all students to thrive within an inclusive classroom often represent the greatest barriers to progress. Efforts to foster inclusion must help to counter these long-standing misconceptions and to support and educate teachers, school administrators and parents so that children with disabilities experience effective, welcoming schools and classrooms that are able to meet their needs. Parents also need to be included as important partners in their children’s education to help assure the best outcomes. Toward that end we offer the following recommendations.

Establish an expectation for inclusion in public policy

Though inclusion is increasingly supported by international organizations such as the UN and UNICEF and endorsed by the 161 states that have signed the CRPD, it is important that the leadership of each country take a strong affirmative role in promoting inclusive education. Inclusionary practice often faces resistance due to cultural and political factors. Inclusion is often at odds with cultural attitudes that have stigmatized disability and have led to segregation or practices based on pity. Political pressure may resist inclusive practices as they may threaten the status quo of segregation. Therefore, changing these attitudes and practices requires first and foremost leadership from the top of society: prime ministers, legislatures, education ministers, and school superintendents. In the United States, major progress in this area happened when President John F. Kennedy spoke out about having a sister with an intellectual disability. President George H.W. Bush signed the Americans with Disabilities Act, and President Clinton frequently repeated the phrase “inclusion not exclusion” as he promoted inclusive practice in all government programs. This type of leadership from the top provides clear direction that change is needed and is supported at the highest level.

National leaders should make clear, highly public pronouncements that inclusive education is the country’s expectation. National leaders might also work to build and engage support from the legislature, which can then provide the policies and programs needed to make inclusive practice successful. This type of top down leadership needs to be extended to the local level as well. Regional and local school leaders should be required to promote inclusive practices.

Establish a public campaign to promote inclusive education

Given the cultural shift that inclusive education requires in most societies, changing public opinion about the importance of inclusive education, especially for students with an intellectual disability, is important. For example, providing images of successfully included students with Down syndrome in general education classes and schools can help to establish inclusive education as a cultural norm among teachers and other educators. Engaging highly visible champions of inclusion such as businesspeople or members of the media can help to both promote acceptance

among educators and create demand for inclusive programs among parents of students with and without disabilities.

Build systems of data collection

Data on the degree to which students with disabilities are included with their non-disabled peers can often be hard to come by. Countries seeking to support the inclusion of students with disabilities should invest in the collection of accurate data on the degree to which children with disabilities have access to the same schools attended by their non-disabled peers. Simply measuring school enrollment is not sufficient: countries must also develop a system for measuring the amount of time students with disabilities spend in inclusive classrooms. The current effort to establish indicators for the United Nations Sustainable Development Goals represents an important opportunity to shape the types of data that will be collected worldwide. It is critical that inclusion-focused indicators be represented in this effort.



The vast majority of students with disabilities can access the general education curriculum and perform at the same level as their non-disabled peers if given the appropriate accommodations. States should thus also measure the degree to which students are learning necessary skills and content in these courses and include students with disabilities in national measures of educational progress. The results of such tests should not have high-stakes consequences for the students themselves. Rather, they should be used to identify schools and communities in need of support in better educating and including their students with disabilities.

Provide educators with a robust program of pre-service and in-service preparation on inclusive education

The research we have summarized points to the importance of preparing teachers and school leaders for inclusive education. Broadly speaking, this work involves two main components. First, attitudes matter a great deal. Just as is the case with the broader cultural attitudes concerning people with disabilities, attitudes among educators are often negative, and those attitudes can carry over to the classroom and the school. Teachers and school leaders need opportunities to both confront these attitudes and to see how successful inclusion can work.

The second component that needs to be addressed is learning classroom techniques that can help children with disabilities thrive. The concept of Universal Design is a particularly promising framework for supporting teacher development. This concept was initially used in architecture, as features like ramps, handicap-accessible toilets, and automatic doors were installed in buildings to accommodate the needs of people with physical disabilities (Rose & Meyer, 2006). Similarly, Universal Design for Learning (UDL) requires that schools design curricula to accommodate the diverse strengths and weaknesses of all learners, both those with and without

disabilities. The UDL approach to inclusive education includes the following principles: 1) provide multiple means of representation, 2) provide multiple means of action and expression, and 3) provide multiple means of engagement (National Center on Universal Design for Learning, 2014). This framework assumes that students are not defined by their disability, as labels categorizing children as either “disabled” or “non-disabled” do not capture the full range of ability across groups (Hehir & Katzman, 2012). Regardless of their disability status, all students benefit from a combination of hands-on, auditory, and visual learning opportunities in the classroom.

For children with Down syndrome and other intellectual disabilities, UDL is a particularly effective approach to teaching and learning. As noted earlier, children with Down syndrome have particular strengths in visual learning and processing, and teachers can capitalize on these strengths in the classroom through multimedia instruction (Hughes, 2006; Davis, 2008). In one study examining the effects of a UDL literacy intervention that combined e-books and interactive literacy games, researchers found positive academic outcomes related to program participation. Students with intellectual disabilities who received the intervention had gained 15 points on the WJ-III Passage Comprehension (a test of reading comprehension skills) compared to less than 8 points for a matched control group (Coyne, Pisha, Dalton, Zeph, & Smith, 2012). Researchers examining math achievement in a sample of children with Down syndrome in Spain found similar results. Students with Down syndrome who were taught using multimedia mathematical software had higher math scores when compared with children receiving traditional pencil and paper instruction (Ortega-Tudela & Gómez-Ariza, 2006). The authors concluded that the intervention permitted students to access the information in multiple ways, particularly through visual representation, which helped students process and retain mathematical content.

Create model universally designed inclusive schools

Inclusion represents a substantial departure from traditional educational practice. Pre-service and in-service training can help teachers develop the pedagogical skills to include a wide range of students, but often it is important for educators to observe successful inclusive schools. Although we believe that nearly all schools can develop inclusive practices, we recommend identifying some schools that have done inclusion particularly well to serve as demonstrations or laboratories for the training of inclusive teachers and school administrators. The Henderson School in Boston, Massachusetts has provided such an example to educators in the United States and across the world.

Such model inclusive schools can also help to develop new and more effective techniques for including students with disabilities in general education classrooms. As we discussed above, children with Down syndrome have unique learning needs. Developing expertise on how to best support students with Down syndrome as well as all students with disabilities can require careful practice and observation. Model inclusive schools provide an environment in which those practices can be refined and improved.

Promote inclusive opportunities in both post-secondary school and the labor market

In the last decade, post-secondary institutions have also expanded access to students with intellectual disabilities and have helped to create inclusive college experiences. The College of New Jersey (TCNJ) in the United States, after receiving a federal grant of \$1.28 million, began offering a four-year Career and Community certificate program for students with disabilities, such as Down syndrome, autism, and other intellectual disabilities. The program involves program-specific core coursework, internships, and TCNJ elective courses with the rest of the college's student body. The program also has partnerships with high school special education programs in order to prepare students with intellectual disabilities for college experiences while still in secondary school.

Another project, Think College: College Options for People with Intellectual Disabilities, is creating opportunities for students with disabilities interested in post-secondary educational opportunities in the United States state of Massachusetts. The success and lessons learned by TCNJ's Career and Community program and similar programs may open the doors and classrooms of more post-secondary institutions as well as improving employment opportunities for students



Provide support and training to parents seeking inclusive education for their children

Parents often need support in seeking inclusive education for their children and in maximizing their child's development. This can be a difficult role. In the United States, parent-training centers have been funded by the federal government to provide this type of support. The Massachusetts Federation for Children and the Colorado Peak Center have been particularly effective in teaching parents about the importance of inclusion and how to obtain and support effective inclusive placements for their children.

● Conclusion

In this report we have reviewed evidence from more than 280 research studies conducted in 25 countries. We find consistent evidence that inclusive educational settings—those in which children with disabilities are educated alongside their non-disabled peers—can confer substantial short- and long-term benefits for children’s cognitive and social development. This issue has been studied in many ways with many different populations of students. The magnitude of the benefits of inclusive education may vary from one study to another, but the overwhelming majority either report significant benefits for students who are educated alongside their non-disabled peers or, at worst, show no differences between included and non-included students.

The research evidence also suggests that in most cases, being educated alongside a student with a disability does not lead to negative consequences for non-disabled students. In fact, research on effective inclusive schools indicates that inclusion can have important positive benefits for all students. What these effective inclusive schools have discovered is that inclusion is not just about locating disabled and non-disabled students in the same classrooms. Effectively including a student with a disability requires teachers and school administrators to develop a better understanding of the individual strengths and needs of every student, not just those students with disabilities. Teachers in inclusive classrooms cannot simply target the curriculum toward the average student. This means providing students with multiple ways to engage with classroom material, multiple representations of curricular concepts, and multiple means for students to express what they have learned. This type of thoughtful, universally designed approach to learning benefits disabled and non-disabled students alike.

Yet, despite this evidence, students with disabilities continue to face challenges in accessing high quality education. Long-standing misconceptions regarding the capacities of children with intellectual, physical, sensory, and learning disabilities to benefit from formal education have, for generations, led educators to deny these students access to formal schooling. Even in countries where laws guarantee the educational rights of these students, educational options are sometimes limited and services are provided through separate programs that segregate disabled and non-disabled students.

The evidence presented in this document provides a clear message that inclusion should be the norm for students with disabilities.





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