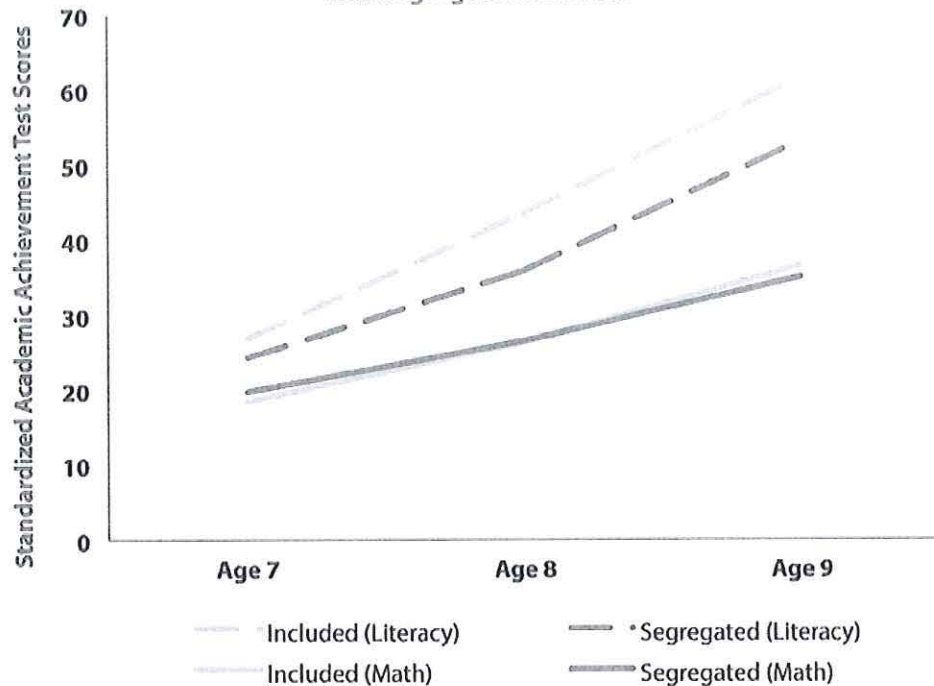


included while the other was educated in separate schools. Researchers then followed these students for two years and found that across the two groups, students experienced similar growth in their mathematical skills, but included students experienced significantly greater growth in the development of 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.

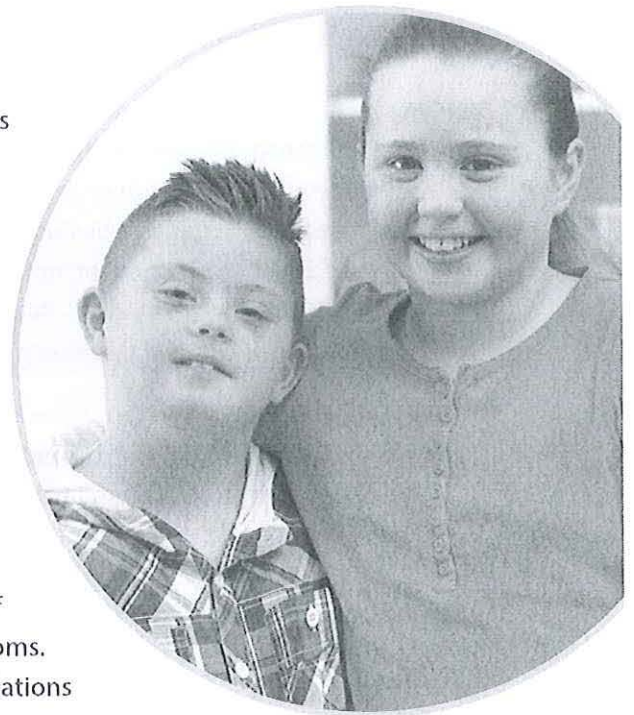
### *Establish a public campaign to promote inclusive education*

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 (Coynne, 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.

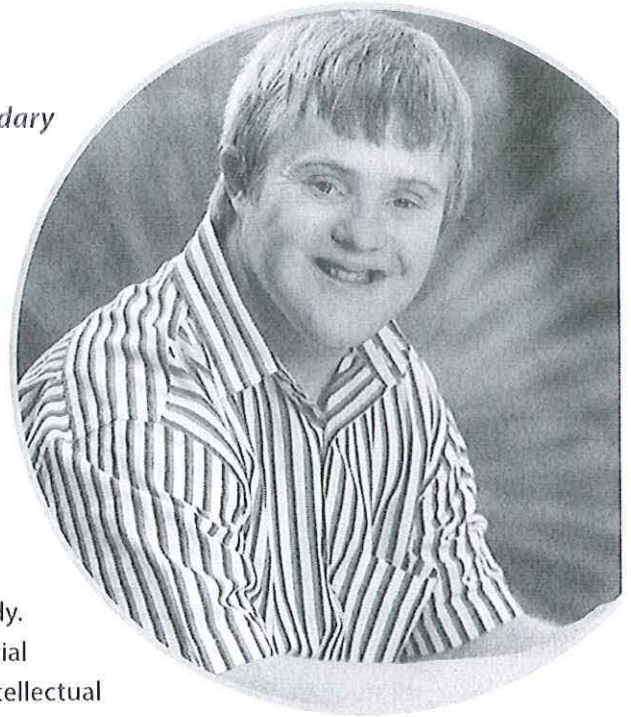




*Promote inclusive opportunities in both post-secondary school and the labor market*

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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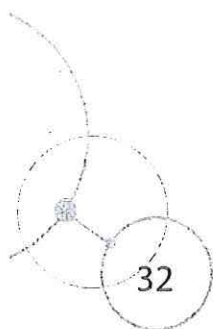
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