

# Empowering Special Education through Technology

Special Education



## Empowering Special Education through Technology

Ensuring students with special needs are receiving the best education is one of the greatest challenges facing school districts around the country. It is a challenge to organize, staff and operate successfully. It is a challenge to determine how best to provide the required curriculum and content but ensure that it is individualized to meet the instructional needs of the student with special needs. It is a challenge to determine how best to evaluate and assess progress. And it is a challenge for the bottom line — special education programs are expensive.

Teachers must have better tools if they are to cost-effectively engage and teach students who have special learning needs. The toolkit needs to be well stocked with a variety of capabilities to meet the needs of students across the disability spectrum. The breadth and depth of the toolkit allows for teachers to effectively differentiate instruction for students.

Recent advances in technology, and the accompanying curricula that utilize these advances, are rapidly filling that toolkit with programs that can provide benefits to students with special needs.

## It's All About Access and Opportunity

The drive to expand and improve special education programs is a story about equal access and opportunity to succeed in education. The legal context for special education traces back to 1975 with the passage of the Education for All Handicapped Children Act (EHA). This law provided the first opportunity for students with disabilities to receive a free and appropriate public education. Faced with evidence that only 20 percent of students with disabilities were receiving a formal education, Congress established the basic framework for modern special education programs.

Twenty-two years later, in 1997, Congress updated the law and expanded its purpose with the Individuals with Disabilities Education Act (IDEA), which still governs special



education programs. Where EHA was focused on basic access to public education, IDEA turned its attention to raising expectations for special education programs and encouraging use of proven, evidence-based teaching methods. Finally, enactment in 2001 of the No Child Left Behind Act (NCLB) extended accountability measures to students with disabilities.

The impact of these three federal laws on special education programs has been nothing short of revolutionary. According to the Center for Special Education Finance, the total enrollment of students with special needs grew by 80 percent from 1976 to 2003 — nearly 3.7 million students in 1976 to over 6.6 million students in 2003. During this same time period, the total public and private school population grew only 10 percent. The special education population as a percentage of the total school population grew from 7.5 percent in 1976 to 12.2 percent in 2003.

As the program has expanded over the years, so has its costs. In the 1999-2000 school year, spending on special education programs was estimated at \$50 billion. Per-pupil spending for students with special needs is estimated to be 2 to 3 times higher than overall per-pupil spending.

For the country's 7 million-plus students with special needs, these federal statutes and expanding programs mean someone is listening. No longer are students with special needs relegated to the last row of the class, marginalized in a public education system that refuses to care. Now, students with special needs are front and center, and teachers must engage. Evaluation and assessment are now mandatory, and states are required to track the Adequate Yearly Progress (AYP) of students with special needs. These laws and programs have significantly changed how the education system responds and reacts to students with disabilities.

"For students with disabilities, access to electronic textbooks and digital instructional materials is a civil rights issue. The Rehabilitation Act of 1973 was amended in 1998 to include Section 508, a set of accessible design standards for products purchased by federal agencies or with federal funds. Section 504 of the Rehabilitation Act, as well as the Americans with Disabilities Act, clearly states that students with disabilities have the right to 'equally effective' educational programming."

JAN MCSORLEY, M.ED., ATP, ASSISTIVE  
TECHNOLOGY, AUSTIN ISD, AUSTIN, TEXAS

## Individualized Learning and Assessment: The "Individualized Education Program"

The ultimate goal of education is to enable all students to reach their full potential. Students with special needs are now included in multiple learning environments within the public school system. It is the teacher's role to ensure that they are provided with the tools, resources and instruction that are best suited to allow them to excel. Many schools struggle with providing this student-centered, personalized learning environment to meet the needs of students with special needs.

The educational centerpiece for a student with disabilities is the individualized education program (IEP). For each student who qualifies, the district convenes an IEP team, consisting of but not limited to, a group of individuals focused on establishing goals and objectives for the student's education program. These individuals may include the student's parents or guardians, a special education teacher, a regular education teacher, a school or district representative, and a school or district expert who can interpret the child's evaluation results. This team creates the IEP which should reflect, among other things, an assessment of the student's disabilities, present level of educational achievement and abilities, special communication needs, and identification of special services or programs from which the child can benefit. The focus is on the child's needs, not on whether the school or district already has special resources or programs in place.

## Modern Information Technologies Have a Big Role to Play

The challenge for every special education program, and particularly programs in smaller districts where resources can be scarce, is to maximize the value of the IEP to the student while keeping the program within broad budget parameters. The IEP must meet the needs of the student, and schools are directed to look outside the school and district if necessary.

A decade or more ago, districts were essentially forced to develop their special education programs largely in isolation from each other. Policy-makers could learn from each other at annual conferences and the like, but the teachers in the trenches could generally draw only upon those resources that were close at hand.

Technology has changed all that. The Internet and the development of rich media can now empower each special education teacher and give every student with special needs the access to quality resources that can engage them at whatever level they desire. Teachers receive support by leveraging a cadre of peers and experts who offer enriched resources.

In addition, technology-enriched classrooms and classes can bring the benefits of IEPs to the mainstream classroom. Properly resourced and planned, an inclusionary classroom can deliver individually tailored content to students with special needs while giving them the social and educational benefits of working with their student peers. These classrooms benefit all students.

## Strategic Investments

In today's and tomorrow's budget environment, every dollar counts. Spending money on one-time solutions is not the best answer. Districts and schools need to consider how a dollar spent on one student or on one solution can be applied without significant additional expense to 10, 20 or 50 students. The goal must be to leverage investments in educational technologies. That requires strategic thinking that links the needs of the individualized programs for students with special needs with the broader educational goals of the school and district.

A framework for considering these types of strategic investments was developed based on the Reauthorization of IDEA in 2004, which aligned IDEA with NCLB requirements. This unprecedented reauthorization now provides school districts with the ability to create strategic programs that give robust interventions to students prior to being evaluated for special education. The law allows districts to utilize up to 15 percent of their special education funds to support these programs.



"I've used computer-based curriculum with students with emotional and behavioral disorders for several years and have seen this technology literally change the lives of my students. When given the opportunity to learn at their own pace and with content individualized to their learning needs, these students gain confidence and become motivated to learn.

I recently had a student who was repeating the 9th grade for the third time. He had fewer than five credits and was definitely on the path toward dropping out of school. When I placed him on our computer-based curriculum product, he was suddenly motivated to learn. He worked through all of his courses and was able to graduate from high school with his class!"

DR. GLENN BILLINGSLEY,  
BEHAVIOR SPECIALIST,  
HAYS CONSOLIDATED INDEPENDENT SCHOOL DISTRICT



It is known as Response to Intervention (RTI). According to the National Center on Response to Intervention:

*Response to intervention integrates assessment and intervention within a multi-level prevention system to maximize student achievement and to reduce behavioral problems. With RTI, schools use data to identify students at risk for poor learning outcomes, monitor student progress, provide evidence-based interventions and adjust the intensity and nature of those interventions depending on a student's responsiveness, and identify students with learning disabilities or other disabilities.*

In other words, RTI is an early detection, prevention, and intervention system that identifies and assists students according to their needs. The framework consists of four components:

1. Universal screening using a standard assessment tool
2. Identification and placement of students into three tiers of instruction based on their respective needs for intervention
3. Instruction as appropriate for each student's tier
4. Continual monitoring to check progress and ensure compliance

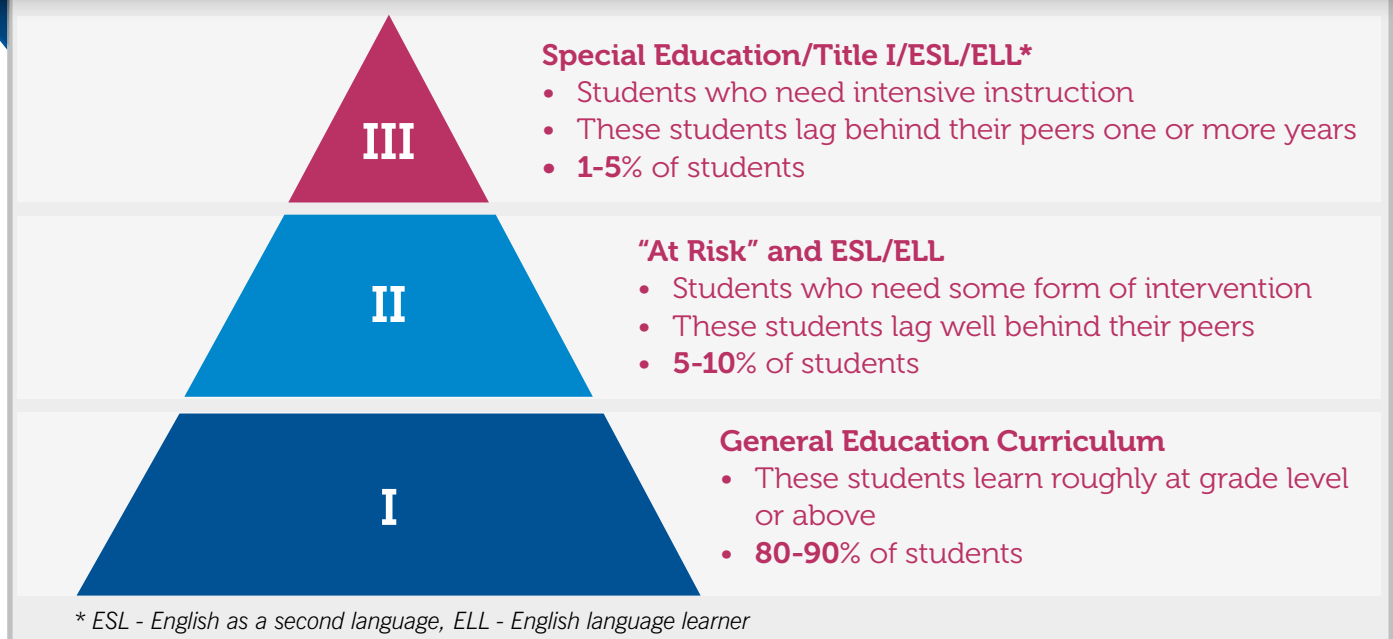
Response to Intervention is designed to provide early detection of students who learn differently. The goal of this program is to focus on providing effective intervention to students at the point of instruction while evaluating their understanding of the content presented. Successful RTI programs keep students from being identified as needing special education services.

## Assistive Technologies and Accessibility

In addition to computer-based curricula and digital content, special education programs have long benefitted from “assistive technologies” that are designed to compensate for particular physical, cognitive or communication disabilities. For many students, absent assistive technologies, access to other educational materials may not be feasible.

One of the most common ways to address the needs of students with physical limitations is to provide modified or adaptive keyboards. The usability of a keyboard may be enhanced by having larger, more distinguishable keys combined with simplified keys and/or groupings of keys. An added feature

## Response to Intervention



## Sample areas of assistive technology solutions include:

### SPECIAL NEEDS LEARNERS

Hearing Impaired	Hearing aids; teletext; video captioning
Speech Impaired	Delayed auditory feedback
Visually Impaired	Large monitors; large font size; text-aloud readers; refreshable Braille display; Braille printers; screen magnifiers; customizable graphic user interfaces; optical character readers
Keyboard Challenges	Ergonomic keyboards; keyboards with big keys; large print keyboards; foot mouse; trackballs; joysticks; touch screens

### DYSLEXIC LEARNERS

Reading pens; text-to-speech screen readers; books on tape

### STUDENTS WITH MULTIPLE DISABILITIES

Switches, screen readers, speech to text, communication systems

may be accompanying software that enables the teacher to make adjustments for one-finger typing, recognition of certain letter combinations and any other number of personalized features that are needed for the unique needs of the learner.

For students who have more severe physical impairments, wireless switch access technologies are most helpful, as these are designed to be used instead of a keyboard. Mouse functions can be replaced with tracking solutions that follow eye movement or head motion. Also available are voice recognition programs that convert voice to text.

Students with visual impairments may need specialized monitors or text-aloud readers. Students with hearing impairments may rely on amplification devices, with headphones and hearing aids or implants.

The range of assistive devices and technologies is truly remarkable. No matter the disability, someone has already created or is in the process of creating a solution to make it easier

for students to interact with the world. For teachers in special education programs, finding assistive devices is only a quick search away on the Internet.

## Conclusion

Over a 30-year period, federal education and civil rights laws have established a framework for guaranteeing equal access and opportunity to students with disabilities. Huge federal and state resources are focused on providing that equal access, as 12 percent or more of students now require individualized education plans.

Strategic investments in classroom and assistive technologies that can be used not only for students with special needs, but for the entire student body, are likely to provide the best return on investment. The most recent technologies have assistive capabilities built into them, so there is less need for individually tailored solutions, and a greater likelihood that students with disabilities can have their learning needs met.

## Special Education Acronyms

Acronyms you need to know in order to talk effectively with parents, policy-makers and potential donors for your organization, school or state.

ADA	Americans with Disabilities Act
AT	Assistive Technology
IDEA	Individuals with Disabilities Education Act
IEP	Individualized Education Plan
LD	Learning Disabilities
LRE	Least Restrictive Environment
NCLB	No Child Left Behind
UDL	Universal Design for Learning
SWD	Students with Disabilities

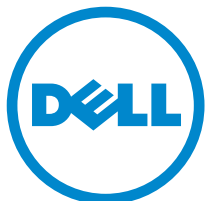


## Acknowledgements:



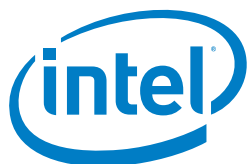
Dr. Kari Kelso is a senior fellow for the Center for Digital Education. Kelso earned her Ph.D. from the University of Texas at Austin in Organizational Communication and has over nine years of experience as the lead manager for two of California's larger school districts in Research, Evaluation and Assessments and one rural district. She has directed the state mandated testing programs for all three districts and worked extensively with teacher teams to create district benchmark tests, conduct standard settings and explore their data more effectively for the classroom as the district trainer for their instructional management systems. She is also a past fellow with the National Center for Education Statistics, as well as a past Judicial Administration Fellow with the Center for California Studies. Having taught at the university level at three universities — combined with her K-12 school district leadership — she knows K-20 education from the inside out. She is the

author of over 25 academic papers and multiple awards presented at national and international conferences and has been personally profiled in newspapers and recognized in the Speech and Language Pathology community for her work in the area of fluency disorders and communication.



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