



# DIRECTIONS

## *Technology in Special Education*

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### Assistive Technology Solutions for IEP Teams: A New Guidebook

By Sherry L. Purcell and Debbie Grant

*Source: Closing The Gap, June/July 2001*

One of the most fundamental changes in the Individuals with Disabilities Education Act (IDEA) when it was re-authorized in 1997 is the mandate for public education to become more inclusive of all learners. Section 614 of IDEA '97 states the following:

The term "individualized education program" or "IEP" means a written statement for each child with a disability, which includes a statement of the child's present level of educational performance, including how the child's disability affects their involvement and progress in the general curriculum.

A special education student has a fundamental right to have access to the general education curriculum. How we as educators provide access to that curriculum is the key to educational success for students with special learning needs. Assistive technology (AT) can be one solution. It is the intent of the law that all students participate in the same course of study, regardless of ability. The need to provide assistive technology in this educational context is essential to this mandate.

Children with disabilities present us with a variety of challenges. Learning is modulated for many through eyes that do not see, ears that do not hear, hands that do not grasp, legs that do not walk, and mouths that do not speak. Assistive Technology bridges the gap between a child's functional skills and his/her ability to participate in the educational process. Functional access technology breaks through the barriers associated with vision, hearing, communication, processing, and motor skills to allow students to do the same things as general education peers.

There is a great need in the public schools to distinguish between instructional technology and assistive technology. Also referred to as Computer Aided Instruction (CAI), instructional technology involves



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software programs that enhance classroom activities. Computer stores have shelves full of such programs, which teachers and parents can select to provide extra practice and skill development for a student to use during free time activities. Some of these software programs tout themselves as programs that are grade specific and curriculum based. A close inspection indicates that they are not aligned with state curriculum and should not be used as such. Instead, they are optional instructional tools and should be used only as supplementary materials.

Assistive technology is fundamentally different from instructional technology. Assistive technology is not optional technology. It is not optional to a student who cannot hear, see, or talk. It is not optional for a student who requires equipment to move or write. Some specialized keyboard and switches break through barriers of motor access. Augmentative alternative communication devices break through communication barriers for nonverbal students. Braille writers break through barriers of blindness and reduced vision. FM systems break through barriers of limited hearing. Word prediction software, software that has text-to-speech capabilities, and math formatting software break through learning, processing, and motor barriers. All of these examples of AT are designed to give students access, through these barriers, to the same curriculum taught to other members of the class.

### AT solutions

As school districts come to terms with the new paradigm of providing access to general education curriculum for

students with special needs, there will be a need to align AT with the performance requirements of the curriculum. *Assistive Technology Solutions for IEP Teams: A Practical Guide for Implementing IDEA* (in press, Attainment Company) was developed with recognition of this growing need and as a result of our experiences in public education.

*AT Solutions* was developed using the following basic principles:

\*AT considerations for the classroom are based on a student's need to access the general education curriculum as defined by performance standards.

\*AT considerations do not necessarily require large expenditures.

The AT solutions presented in this guide represent changes in materials and instructional strategies. These solutions are built on concepts related to accommodations. An accommodation as defined in IDEA'97 is:

*"a change in the educational setting, materials, and/or strategies that does not significantly alter the content of the curriculum or level of expectation for students' performance and which allows students to access the general education curriculum:"*

The AT solutions presented in this guide are designed to be consistent with the level of performance expected for each curriculum standard. The guide covers changes in materials that run the gamut from low-no tech to the use of complex electronic devices. Changes in

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#### Publisher & Editor in Chief

Janet P. Hosmer

#### Editor

Kathy S. Knight

#### Technical Editor

Chester D. Hosmer, Jr.

#### Regular Contributors

Lorianne Hoenninger

Susan Lait

DREAMMS FOR KIDS, INC.

273 Ringwood Road

Freeville, NY 13068-5606

VOICE: 607.539.3027

FAX: 607.539.9930

Greetings@dreamms.org

www.dreamms.org

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strategies are designed to reflect the projected access issues inherent in the teaching required to meet the standard.

*AT Solutions* presents a range of assistive technology considerations that can be made for any student who is experiencing educational challenges. There is an emphasis on the low end of the technology spectrum for a variety of reasons. First, simple accommodations are readily available and many times more accepted in the classroom than the more sophisticated adaptations. Second, many times such accommodations are closer to the “norm” for general education students and thus less obtrusive and more readily accepted by peers. In other words, these accommodations are part of providing the least restrictive environment for a child. Third, schools have limited resources. Cost effective solutions that assist a child in achieving independence in academic functioning can be appropriate in meeting IDEA’97 regulations for AT consideration.

**Design of guide**

The *AT Solutions* guide is designed to be user friendly. Curriculum standards within each content area are presented in a chart format, which includes:

- \*the grade and standard
- \*an analysis of the access Issues related to performance of the standard
- \*suggestions for AT solutions
- \*sample IEP goals.

Figure 1 helps to illustrate the basic format of the manual.

**AT Solutions: Keywords**

The *AT Solutions* guide is designed around the use of this chart. The AT Solutions on the chart use keywords to locate the following information:

- \*A description of the AT solution, including an illustrated example, for some.
- \*Suggestions for how you can I make it, if possible.
- \*Information on how to buy it, including costs and vendor sources.

In some cases the solutions listed on the chart are inclusive of a variety of choices a teacher could make for a student. The choice made will be dependent on the type and severity of the disability, which presents as an academic barrier. For example, the student who has mild fine motor difficulties may only need a pencil grip to access writing tasks. A student who has a severe motor disability may require computer access for writing. Sample solutions must be selected with the individual student in mind. A multi-disciplinary approach is recommended when a student has multiple and/or severe disabilities, including consultation by the speech-language pathologist for a nonverbal student and an occupational or physical therapist for a student with motoric needs.

The authors have written sample goals to help illustrate how AT might

be incorporated into a typical IEP goal. In all cases AT, is written as the “tool” used to perform the goal.

The general format is:

Using (AT solution), student will (curriculum standard) with \_\_\_\_\_% accuracy \_\_\_\_/\_\_\_\_ times.

Example:

Using a VOCA programmed with speaker or narrator names, S, will name the speaker or narrator of a text with \_\_\_\_\_% accuracy \_\_\_\_/\_\_\_\_ times.

**Summary**

The consideration of the need for assistive technology for students enrolled in special education in public schools is mandated by IDEA’97. This article views AT broadly and in the context of functional access to the general curriculum. A new resource guide called *Assistive Technology Solutions for IEP Terms: A Practical Guide for Implementing IDEA* (in press, Attainment Company) was discussed.

As IEP teams address AT in relation to a student’s performance in the general curriculum, it is the hope of the authors that this guide will be a valuable resource in helping teams to analyze and provide AT that is educationally relevant and that matches a student’s performance needs in the classroom.

Note: Please see Page 8 for important CTG subscription information. §

GRADE DOMAIN STRAND SUBSTRAND STANDARD				Figure 1
SAMPLE TASKS	ACCESS ISSUE	AT SOLUTIONS	IEP GOALS	
		Keywords	Using (AT solution), S, will (curriculum standard) with _____% accuracy ____/____ times.	

# Making a Difference in the Classroom with Early Literacy Instruction

By Sylvia B. Smith, Scott Baker, and Sister Mary Karen Oudeans

Source: *TEACHING Exceptional Children, Council for Exceptional Children, Vol 33, No. 6 JULY/AUGUST 2001*

How can professional development programs help early childhood teachers with their instructional programs — so that children at risk of having reading delays instead show great improvement in skills and understanding? We found two effective dimensions of a professional development program in early literacy:

\*Adoption of a dynamic early literacy assessment system.

\*Teacher implementation of research-based early literacy practices.

In this article, we focus on the link between changes in teachers' conceptual knowledge and student performance. We show how teachers used the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment system (Good & Kaminski, 2000), and we describe significant changes in teacher practice and student performance on foundational skills in early literacy.

## Evolution of Instructional Changes

Every kindergarten and first-grade teacher wonders, "How can I help all children in my room learn to read successfully and on time?" A kindergarten classroom teacher and a Title I early literacy teacher at Glendale Elementary School wanted to better prepare their students for reading and made some major changes in how and what they taught every day in the classroom. The solutions they came up with resulted in significant improvements in how prepared their

students were for learning to read. These teachers work in a school that presented a number of challenges to their goal of preparing all students to be successful readers. The percentage of children on free or reduced lunch was approximately 85%, and many students came to school not well prepared to learn the academic and social routines of kindergarten. The school had the highest poverty level in the district; it also had the highest mobility rate. In addition, approximately 15%-20% of the children were English-language learners.

Despite these challenges and as a result of participating in the 4-year professional development project, the success these teachers had in preparing all their students for reading was substantiated. Other kindergarten teachers in the district heard about the success these teachers had in changing the Glendale kindergarten program; typically, the first thing they wanted to know was what curriculum the teachers used. The two teachers responded by saying, "It's not the curriculum — it's the way the curriculum is used that really seems to make the difference."

The next section describes two themes that emerged from a recently completed 4-year professional development project that seemed to be most influential in leading to effective and sustained changes in teacher practice (Baker, Smith, Kame'enui, McDonnell, & Gallop, 1999).

## Themes of Sustained Change in Teacher Practice

Two themes underlie why the Glendale teachers suggested that *the way* the curriculum was implemented (and not the specific curriculum they used) made the difference between successful and problematic learning for many of their students (Baker et al., 1999). The themes were recurrent throughout the cases where changes in teacher practice were most effective and valued by the school (see Figure 1).

**Figure 1. Circle with Arrows**



Teachers acquired a *deep instructional understanding of the rationale for the changes* being considered. They had multiple opportunities to try new instructional practices in the classroom, and they received specific feedback about implementation during ongoing professional development activities.

The presence of a *school-based assessment system* provided sensitive and frequent information on how well children were learning important concepts.

Together, these two themes complemented each other in a way

that demonstrated a bridge between research and practice.

### Acquiring Conceptual and Applied Knowledge About New Instructional Practices

We gradually introduced teachers to relevant aspects of the early-literacy research base during a series of professional development meetings. We asked the teachers to prepare for each meeting by reading a selected research article (e.g., Good, Simmons, & Smith, 1998) or a one-page synthesis we prepared of a report or article. The focus of each meeting provided teachers with access to the empirical knowledge base. More important, however, the meetings gave teachers away to have ongoing and reflective discussions about

\*The ways their students were responding to literacy instruction.

\*Which instructional practices should be retained, modified, or dropped.

\*How to align new and existing knowledge about the teaching of literacy skills in kindergarten.

In short, the meetings gave teachers the time and opportunity to think about what was working and not working in their classrooms and why. Having time to grapple with more abstract research knowledge and how this knowledge fit into the real-world contexts of classroom practice appeared to be a critical component of sustained teacher change (Gersten, Chard, & Baker, 2000). The single most important factor associated with the sustainability of effective instructional practices may be the alignment between actual instructional practices used in the classroom and the depth of knowledge teachers have of the

underlying concepts that support the use of innovative practices.

### Macro Changes in Content of Early Literacy Instruction: Big Ideas in Early Literacy

#### *Instruction*

Actual changes in the two teachers' instruction occurred on two levels. At one level, the teachers showed a broad shift in the overall content of literacy instruction. Infused in the daily 30-minute literacy curriculum was explicit instruction in phonemic awareness and letter sounds (Simmons & Kame'enui, 1998; Snow, Burns, & Griffin, 1998). At a second level; the teachers systematically sharpened the details of instructional content and delivery over time to increase the likelihood that all students in the classroom would meet the early literacy goals. Figure 2 shows seven of these strategies.

#### Figure 2. Seven Critical Components of Early Literacy Instruction

1. Allocated time for daily, highly focused literacy instruction.
2. Consistent routines for teaching big ideas of early literacy.
3. Explicit instruction for new letter names and sounds.
4. Daily "scaffolded," or assisted, practice with auditory phoneme detection, segmenting, and blending.
5. Immediate corrective feedback.
6. Daily application of new knowledge at the phoneme and letter-sound levels across multiple and varied literacy contexts.
7. Daily review.

### Micro Changes in Design and Delivery of Early Literacy Instruction

#### *Explicit and Consistent Teacher Wording*

During this professional development project; the two teachers became analytical about the effects that specific aspects of instruction had on student learning. For example, the wording they used during instruction became much more consistent over time. In teaching letter names and sounds, they would always say: "The name of this letter is *t* and the sound that it makes is /*t*." The teachers insisted that students learn both letter names and sounds simultaneously because students needed this information to try writing words, which the teachers wanted them to do every day early in the school year.

#### *Sequence of Letter Name and Sound Instruction for High Utility*

In the second year of the project, the teachers changed the sequence of their curriculum and introduced vowels and high-utility consonants for writing words and reading words earlier than they had the previous year. This change further supported the school's emphasis on writing in kindergarten. §

*Look for part two next month!*  
\*\*\*

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# “The most exciting child..”

## Computer use in an inclusive setting for a preschool child with cerebral palsy

By Dorothy Laufer

Source: *The Catalyst*, Summer 2001, Volume 17 #4

*In a past issue, computer specialist Dorothy Laufer wrote about “the most exciting child” she has ever worked with. John (not his real name) is a four-year-old with cerebral palsy who has attended both an inclusive pre-school and an augmentative speech class. He is a wheelchair user with limited hand movements, and he is able to use a communication board as well as a head switch to operate a computer and voice input device.*

*In Part One, Dorothy described John’s initial efforts with a single switch and a variety of scanning arrays, using Don Johnston’s Discover:Kenx. She planned to follow up with a more detailed discussion of his orderly progress, but he had other ideas. John demonstrated such eagerness to venture into more complex activities that this issue finds him mid-stream, setting new directions and preparing for kindergarten. Rather than forcing him into a set curriculum, Dorothy has followed his lead with new activities. Recently she commented: “This week he asked that he be taken first in the music/singing activity they do before he comes to me, so that he could get extra time working with me on the computer...and then he came to me really wanting/needing to copy drawings from his communication board. This is forcing me to come up with new ways for him to draw.” The*

*following is a brief update on John’s progress; we’re sure we will hear more about him in future issues!*

In a recent issue of *The Catalyst*, I reported on how we were using *KidPix* as a tool for John, a young 4-year old child with cerebral palsy (“*Computer Use in an Inclusive Setting for a Preschool Child with Cerebral Palsy*,” *The Catalyst*, Spring 2001, pages 9-11). My intention was to follow that article with one that described the activities he “grew into” as the year progressed. As it turned out, this plan had to be put aside because John led us into new territory and we followed along willingly.

In the earlier article, cited above, we described how we had prepared various arrays that would allow John to control specific moves using a scanner or a single switch with *KidPix* the drawing software we were using. The article described the activities we developed; each activity required specific tools and movements, so we prepared a scanning array for each activity. Each array gave John opportunities to select what he needed from a limited number of items. The adaptive hardware/ software that we were using, *Discover*, comes with a prepared, ready-to-use program that lets you control *KidPix* with a switch. *Discover-Switch* is a multi-level scanning program, too sophisticated

we thought for a four-year old child. So, we made modifications that gave John fewer choices and allowed him to do a limited number of things.

One day, while we were working, and as I was selecting a tool for John to use, I told him, “some day, when you are bigger, you’ll be able to select these tools by yourself.” Well, his eyes sparkled and it was very clear that he wanted to try it right NOW! We decided to let him do just that and it immediately became clear that he really wanted to fully explore this new scanning method.

I have always felt that computer use in special education needs time for exploration, both on the part of students and teachers, so it was not too difficult for me to put aside my plans and prepared activities and follow John’s lead. I cannot really show you the results of this exploration because it is the process, not the product, that is important and I was reminded of this as I watched John work. Although I made suggestions and attempts to guide John, it was clear that he simply needed the opportunity to explore. He needed time to “play” with the tools. Many of the sessions ended with a series of lines of various colors and widths on the screen. What I witnessed was his feeling of power, the joy he felt in being in control, and the development of his ability to take risks. This was the first time that he was able to change

his mind and erase something he had done. It was the first time he could just try something to see what would happen. As the school year draws to a close I think that John may welcome some guided activity but I'm not really sure he's ready for that. What I am sure of, though, is that next year, when he is in kindergarten, he will begin to be able to use the computer more effectively as a tool to complete assignments and to express himself. I have always felt that this is the computer's greatest potential in special education.

Dorothy Laufer is a computer specialist, advocate, and consultant, with emphasis on resources for individuals with disabilities. She has taught in the Montreal Public Schools, at McGill University, and in the Czech Republic. She can be reached at 5604 Palmer Avenue, Montreal, Quebec, Canada H4W 2P1. E-mail: D.Laufer@NetAxis.qc.ca §

## The Catalyst

*The Catalyst* is a quarterly newsletter providing comprehensive coverage of technology in the fields of special education and rehabilitation. Published since 1981, *The Catalyst* includes current information on:

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## HalfthePlanet News

## Closing The Gap

### The Second International Conference on Parents with Disabilities and their Families

The Second International Conference on Parents with Disabilities and their Families will be hosted by (TLG), the U.S. National Resource Center for Parents with Disabilities. Conference content will draw from international experts who are on the cutting edge of advocacy, research, training and services to parents with disabilities.

### New service offers comprehensive disability related state information with 1 call

Looking to make everyday life a bit easier for the state's disabled population, Gov. Jeb Bush on Thursday announced the creation of a one-stop clearinghouse that will provide information about a variety of state programs.

### Voting Accessibility Department

HalfthePlanet is pleased to bring you this new resource in partnership with the National Voter Independence

Project and the New Hampshire Developmental Disabilities Council.

This department focuses on the issues of polling place accessibility, ballot accessibility, attitudes toward people with disabilities at polling places, legislative initiatives in election reform, and voter participation among people with disabilities.

### Disability Services of the Southwest (DSSW)

To ensure a lifestyle filled with opportunity, independence, and empowerment is accessible and affordable for our clients, DSSW works in conjunction with specialized government programs to provide practical and truly indispensable services to persons with disabilities in Texas.

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