

Addressing the Special Needs Students through Technology

The Technology-Related Assistance for Individuals with Disabilities Act of 1998 describes assistive technology as "any item, piece of equipment, or product system whether acquired off the shelf, modified, or customized that is used to increase, maintain, or improve functional capabilities of individuals with disabilities (Council for Exceptional Children, 1998)." Now assistive technology refers to anything from a modified pencil to a high-tech customized computer system. In simple terms, assistive technology should make life easier for persons with different abilities.

Countless sources describe ways in which technology can improve the lives of students by addressing their needs. To begin this discussion, the writer referred to the study by Lahm and Morrissette (1994) which outlines seven areas of instruction where assistive technology, through various approaches, can aid students with mild disabilities.

This study suggests using the outline function of word processing to set out ideas and subtopics. For note taking, scanners should be used to copy the teacher's notes if the student has difficulty writing. "Smartboards" can also help because notes can be printed out after the lecture is finished. Tape recorders can be used to record notes, and videotaping may be helpful for visual learners who gain knowledge from body language and facial expressions. Laptop computers can provide high-tech tools for note taking because of their mobility.

As simple as it may seem, the common word processing software actually may be the most important application of assistive technology for students with only mild disabilities. It can help students with the mechanics (spelling and grammar checkers), the process of writing (the generating of ideas plus editing and revising), and even the clarity and tidiness using today's inexpensive ink-jet printers. Word prediction software, which works well in conjunction with word processing software, that assist in spelling by predicting words if needed. Productivity for special needs students often suffers and insulates behind other students in

the class. Spreadsheets, databases, and graphics software offer tools that enable students to work on subjects that require calculating, categorizing, and predicting. PDA's (Personal Digital Assistants, such as the Palm(tm) handheld) help with organization of projects by giving a tactile way to keep calendars and other information.

Many students with mild (minimal or lower) disabilities find gathering information for academic work might be difficult to adapt with. The Internet and multimedia software can transport students beyond their physical environment to access information electronically and establishing electronic mail (e-mail) communication with other students often motivates these learners to generate more work and be more successful.

For help in cognitive assistance, a huge assortment of software is available for problem solving and simulation. By combining these programs with instructional curriculum, skills in thinking and problem solving can improve. For example, having students complete an activity such as "Oregon Trail" in which they face the problems and challenges of traveling in a covered wagon can greatly increase their understanding of the subject when it is presented in class. Opening a unit of study with such an activity has been shown to be very effective to stimulate interest and motivate students more than the traditional lecture or book approach.

By using the tools offered by computers and other technology, educators can adapt the appearance of work to address special needs students. Color schemes can be changed to accommodate children with attention deficit. The size of items is flexible using operating systems such as Windows. Auditory signals and visual cues are available under the control panels of most personal computer (PC) units and many offer a special icon entitled "accessibility options" which allows for the setting of special features. By using this option, teachers can tell the computer to ignore slight key strokes and only accept the firm ones.

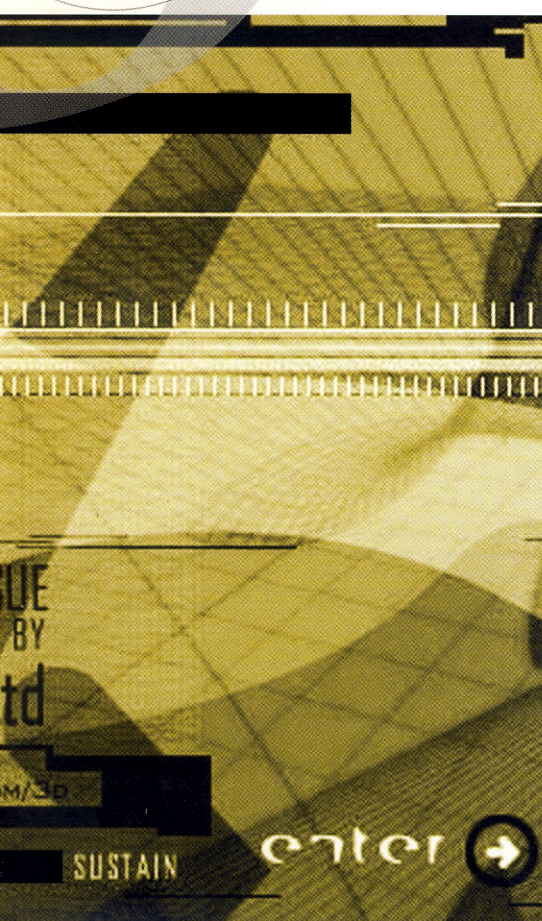


Table 1

Difference in Ability	Strategy to Address the Need
ADHD (attention deficit / hyperactivity)	Provide students with multi-media desktop publishing. Use outlining software such as Inspiration(c) or Kidspiration(c) provide word prediction software.
BD (behavior disordered)	The computer often provides motivation and lessens behavior problems. Software such as word processing lessens stress due to inadequate skills
Autism	Allow students to tape presentations instead of having to do them live. Keyboarding or taping to reduce the stress of touching pencils, etc. Use text to speech, color adjustment, illustrations
Deaf / Blind	Assistive listening devices to increase volume and clarity. Low vision devices such as big screens, text to speech, large keyboards. Set the color settings on the computer for higher contrast.
EBD (emotional / behavior disorder)	Prewrite to prevent outbursts. Graphic organizers to reduce stress while learning allows these students to "discover" the computer themselves and find their own solutions can be surprising successful.
SDD (significant development delay)	Position the computer low enough for the student's feet to touch the ground. Place the monitor at eye level. Use a timer to practice sharing. Use headphones to eliminate distractions. Use the control panel to adjust the use of the mouse and keyboard for optimum success. Use large keyboards for easier typing.

The amazing part of using technology to address the needs of students with other abilities is that the students who are considered "average" or able to complete the class work without adaptations benefit as well. Technology itself makes it easier for students to complete work, cooperative with students anywhere and at anytime, travel virtually to far-away places, look back in time, and produce professional results when completing projects. Sharing computers or working in centers not only helps the student lacking certain skills because of a physical, emotional, or chemical imbalance, but improves group skills in every student that participates.

Working with students from other places through e-mail or the Internet broadens everyone's perspectives and encourages understanding. And one of the best benefits of any technology is the quality of work produced by students of all ability levels. Publishing programs help students produce newsletters, brochures, flyers, greeting cards, and other projects that look as if they were printed professionally. Students who have trouble with neatness for any reason enjoy this added benefit. The same options used for visually impaired students like color schemes and sizes

of icons can make the computer more enjoyable for all the students.

Assistive technology, while designed to improve and lives of students and adults with disabilities or differing learning abilities, can go far beyond reaching just the students who have identified learning difficulties. It can reach all learners and learning styles. Teachers who investigate the options of assistive technology through professional development or individual study and make the effort to adapt for a few have found greater participation, involvement, and success for all of their students and a renewed feeling of power and possibilities for those who struggle.

References:

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Sources from Internet

