

INTRODUCTION

The theme of this issue is Assistive Technology and Special Education. Special education was one field to embrace technology early on, as its potential for students with disabilities was apparent from the beginning. As this field begins to blend with that of general education, due to legislative and societal trends supporting the inclusion of students with disabilities into public school classrooms, innovative approaches are needed to bolster this transition. Technology, when integrated appropriately into the curriculum, can be a powerful equalizer for the student with disabilities, bringing with it many opportunities for increased independence and participation, but no guarantees. This issue takes a look at some of the benefits and barriers to technology use, ways to ensure that technology is included in the student's Individualized Education Program, and practical considerations on its use to enhance the academic, recreational, and social needs of children and students with disabilities. The included articles represent a blend of field-based and empirical research approaches.

Students with severe disabilities are one of the primary users of assistive technology. Traditionally, these students have received their education and related services in self-contained classrooms. With the move toward inclusionary placement, they provide the greatest challenge to meaningful classroom participation. In spite of its potential, receiving teachers often find assistive technology a complex and disruptive innovation. Doris Carey and Paul Sale suggest some practical considerations in the use of technology to facilitate the inclusion of students with severe disabilities in the area of curricular accommodations and communication enhancements.

Perhaps the most difficult group to integrate are those students with severe emotional or behavioral disorders. For those students, the computer offers a learning environment without necessitating adult interactions or behavioral control issues. Software can be selected which addresses critical thinking, problem solving, social interaction, and behavioral control skills. The computer provides an essential tool to monitor behavioral change and to produce reinforcing materials and

activities. The literature in this area is limited, sparse at best. Gail Fitzgerald provides an excellent overview of using technology with this population, highlighting these applications by providing specific examples of use from the field.

Although these students may represent the most ambitious cases for inclusion, since the passage of the Education for the Handicapped Act (EHA) in 1974, all children with disabilities have had the right to a free appropriate public education. Today, children, ages 3–21, are required by law to have an Individualized Education Program (IEP); those from birth to 3, an Individualized Family Services Plan (IFSP). Amendments made in 1990 to EHA stated that if assistive technology devices or services are necessary to support the child in making reasonable educational progress in the least restrictive setting, it must be included in the IEP/IFSP. The RESNA Technical Assistance Project provides an informative overview for parents and professionals. They trace the history of legislative mandates for assistive technology, suggest potential uses, describe three ways to include assistive technology into the IEP, and discuss funding of such technology.

One of the initial assistive technology services in determining appropriate technology devices for a student is an assistive technology evaluation. Kathleen Beaver and William C. Mann describe some of the barriers to successful use and propose a seven stage model for Assistive Technology Teams to follow when selecting devices for individual students. Each component of this model provides a knowledge base of areas to consider for successful computer access. A case study exemplifies how this model might be implemented. Equally important to the selection of appropriate devices is the identification of software programs which meet the interests and learning needs of students with disabilities.

In addition to the identification of specific hardware and software recommendations, strategies must be designed to ensure its use in the classroom. As assistive technology can act as a prosthesis for some students with disabilities, by providing them a means to communicate through speech or writing, (i.e., a nonverbal child using a

TouchTalker or a child with quadriplegia using a scanning array to type on a computer), other technology applications can augment the learning process. Often, classroom curriculum must be modified to meet the instructional and technological needs of these students. Three articles address the advance of newer technologies, and their potential to dramatically increase their use as classroom learning tools for all students.

In the first example, Charles Kinzer, Marcy Gabella, and Herbert Rieth argue that traditional modes of instruction have not succeeded with mildly disabled students in inclusive settings. They suggest a powerful alternative, using an anchored instruction approach combined with computer and videodisc-based technology to enhance the social studies skills and literacy development of these students. This description of a current project looks to infuse a model of anchored instruction into an eighth-grade resource room and includes practical suggestions for the educator.

Another model which examines an instructional model in the middle school, addresses the inability of students with mild disabilities to organize and combine information provided throughout an integrated curriculum. Although the number of computers in the classroom is increasing, many still sit unused or used solely for free-time activities. Judy Zorfass describes the experiences of middle school teachers who implemented a curriculum unit, I-Search, with mildly handicapped adolescents in an inclusion setting. The software provides the scaffolding for students in order to assist them in linking information collected from a series of experiences in a cohesive and reportable manner.

Another way for teachers to use technology to meet the individual curricular needs of students with disabilities is through the use of Hypermedia applications. Although Kyle Higgins and Randy Boone contend that the use of this application has significant potential as an educational medium, few teachers venture into the world of producing their own Hypermedia curriculum applications. The authors have developed an easy-to-use public domain software package, Hypermedia!Now, which is available free to readers. They highlight both teachers' and students' use of this new authoring program for the creation of electronic books.

Although there is much excitement of the potential of these technologies on the skills of students with disabilities, the majority of reports on the use of computers is actually what is felt or believed. Susan Mistrett, Susan Constantino, and David Pomerantz report on an empirical study designed to promote social interactions of young children with disabilities in a community-based setting. They suggest that young children with mild disabilities need many opportunities to interact with their nondisabled peers in an integrated setting if social skills are to be acquired, internalized, and maintained across settings as the child grows older. When this is provided, they maintain their placement in regular education environments.

Change comes slowly, if at all, particularly in the educational setting. Judy Zorfass, Patricia Corley, Arlene Remz, and Denise Ethier describe a current project funded by the U.S. Department of Education, to promote change at the local level in the use of technology, media, and materials for students with disabilities. They present a hypothetical case study to illustrate the comprehensive and dynamic approach of the National Center to Improve Practice (NCIP). NCIP offers a variety of services and encourages school districts to join the NCIP network.

Technology is a powerful tool and has opened doors for many individuals with disabilities. However, this success is dependent upon appropriate long-term sustained use. As more assistive technology is developed, parents of and professionals serving children with disabilities look to it as an equalizing tool. We look to more answers to how these applications should be used to empower each child to reach his potential. The readers of this journal come from a variety of professional and experiential backgrounds. However, we know they possess a common interest—assistive technology. The articles in this issue will provide a starting point in special education technology issues for some readers. For others, we hope to encourage a broader perspective of its use with individuals with disabilities.

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