



DREAMMS for kids

DIRECTIONS

Technology in Special Education

For Parents & Professionals

Vol. 2, No. 6

January 1996

Adapted Keyboards

by CHESTER HOSMER

As I sit and type this article on adaptive keyboards, I realize once again how many things each of us take for granted. The simple task of typing a letter, writing an article, or responding to e-mail has become almost automatic. However, for those who are physically challenged, typing a letter or a note, using a spell checker, playing a computer game, or accessing an on-line service can be a significant challenge.

The development of adaptive or alternative keyboards continues to provide access to computers and other devices that had previously been un-reachable. You may be asking, what is an adaptive keyboard? Well, I've searched for a good definition and couldn't find one... so here's mine.

"Any device that provides simplified keyboard-like access to a computer by enabling the user to capitalize on their individual strengths".

Selecting an Adaptive Keyboard

In order to properly select the appropriate adaptive keyboard for a student, several factors and frames of reference need to be evaluated. Get yourself a notebook and start writing down information that you may want to reference later. Here are some tips....

1. Consult an occupational or physical therapist, or appropriate professional in order to properly assess the student's physical capabilities.



Inside

Keyboard Vendors	3
ATFSCP Notes	4
DREAMMS Bookstore	11
Bulletin Board	12

Please see KEYBOARDS on Page 6



My Dear Friends,

1/96

Happy New Year!

This past year certainly has been one worth remembering at DREAMMS for Kids, and I've decided to share a short synopsis of our accomplishments with you in my column this month.

January found us just starting to really get a hold of the direction that our agency was going. We had been in existence for about six months, and knew that our goal was to provide assistance and information in the area of assistive technology use, but were pretty much still in a new growth period. Our online services were only recently implemented, and *DIRECTIONS* had just moved to 8 pages!

By the middle of the year we were still trying out various formats for *DIRECTIONS*. We began offering our Tech Paks on assistive technology information, and were planning new programs and services for our readers. Our circulation was nationwide by then, and we were growing by leaps and bounds!

Autumn and winter brought falling leaves, cold days, and an explosion of DREAMMS for Kids services! We could barely keep up with Tech Pak orders, *DIRECTIONS* grew to 12 pages, our online services turned into a really cool World Wide Web homepage (come see us at <http://users.aol.com/dreamms/>), and we started putting our Computers for Kids Program into place! We were thrilled to be able to donate 10 complete systems to local kids with special needs during Christmas week... and we have plans for many more donations during the upcoming year!

As we begin 1996, I'd like to take this opportunity to say thank you to Peter Green at the Apple Worldwide Disabilities Solutions Group for their donation of adaptive hardware and software! And, a special thank you to our readers, sponsors, donors and supporters! You have given us the motivation and encouragement to follow our dream and positively touch the lives of children with disabilities around the world!

As always... my kindest personal regards!

Janet

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Vendors - We welcome product news. Please include pricing and contact name with press releases.

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Remember

A professional assessment or evaluation of your child's strengths and abilities is a really good idea before you spend money on any adaptive or alternative computer access device!

Adapted & Alternate Keyboard Manufacturers

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Assistive Technology Funding & Systems Change Project Notes

IDEA REAUTHORIZATION - WHAT'S IT MEAN?

by Susan Goodman, Esq.

The Individuals with Disabilities Education Act (IDEA) is divided into several sections, each labeled alphabetically. Part B and Part H are the sections that require a Free, Appropriate, Public Education (FAPE) for school-aged students with disabilities (usually ages 5-21) and services for infants and toddlers, respectively. These parts are "permanently authorized," which means that, unless they are repealed by another law, these rights remain in federal law. Parts C to G are up for "reauthorization" this year. In other words, Congress has to pass legislation so that programs funded under these parts can continue. Parts C to G authorize funding for important programs such as personnel training, research, and demonstration projects. Each time Parts C to G are "reauthorized," the date in which the funding will expire is determined by Congress. Reauthorization usually occurs every three to five years.

Many of the advances made in educating students with disabilities have grown out of programs and research carried out with discretionary funds. Discretionary funds (under IDEA) are funds that must be reauthorized, as described in the paragraph above, and are used by the Department of Education to fund research, training, and demonstration projects. For instance, UCPA receives demonstration/outreach funds for a project called the Technology-Learning-Collaboration Project from the Office of Special Education Programs, U.S. Department of Education. This project trains family and staff teams to use assistive technology with children ages birth to eight years.

During the reauthorization process, changes and additions are often made to various parts of the law (including Parts B and H). For example, in 1990, definitions for assistive technology (AT) devices and services were added. Prior to

1990, students were entitled to technology if it was determined to be necessary to meet their needs in the Individualized Education Plan (IEP) process. However, the 1990 reauthorization gave advocates the opportunity to enforce this right and highlight assistive technology.

CONGRESSIONAL ACTION

The Senate is currently working on a reauthorization bill which has not yet been introduced.

HOUSE ACTION

Meanwhile, the House of Representatives has issued a second draft of its reauthorization bill. The House Bill would:

- Use the definition of developmental delay for children up to age nine. This definition relies on the ways in which a child functions at school, home, and in the community, rather than categories of disability. It currently applies to children up to age five.

- Change the formula for funding under IDEA from a "head count" to a population-based census formula. This is designed to change the practice of 'over-identification' of students as having disabilities.

- Base financing on the individual needs of the student, rather than the type of classroom that s/he attends. This is designed to discourage funding based on a particular type of classroom (e.g., self-contained or inclusive).

In addition, under the House bill:

- The preference of the parents would need to be

considered when determining the least restrictive environment for the student.

□ Schools would offer mediation to parents where a dispute about the student's educational program occurred. Attorneys could not be present, on behalf of either the school district or parents.

□ The ability of OSERS to issue policy letters would be greatly curtailed.

□ The terms "orientation" and "mobility" services would be added to the related services section.

□ Assistive technology is not included under the related services sections. Overall, the proposed bill has broad implications for students with AT needs and their families, who could be denied access to AT unless the funding is provided by a source other than the school. In addition, an effort is currently underway by professional organizations (e.g., American Federation of Teachers, National Education Association) to limit the types of AT that can be considered. Specifically, these organizations have called on Congress to eliminate the school's responsibility to provide devices that students may benefit from while not in school. Obviously, this could cover a broad range of devices.

The House bill would also limit the Department of Education's ability to write policy letters. Much of the progress that has been made in addressing the AT needs of students has been as a result of policy letters.

NEXT STEPS

Families should try to stay current on the news about efforts in reauthorizing IDEA. Some of the groups that may be able to provide information include: (1) Parent Training and Information Centers; (2) local, state, and national advocacy organizations for persons with disabilities; and (3) the offices of your Congressional representatives. In addition, online bulletin boards (BBSs) have active exchanges on this

topic; consider this information resource to stay up-to-date.

If you have further questions, please contact Susan Goodman by phone at (202) 776-0406, by fax at (202) 776-0414, or by e-mail at the afscp@aol.com address.

To secure general information on the project, contact: Assistive Technology Funding & Systems Change Project, 1660 L Street, NW, Suite 700, Washington, DC 20036 Tel: (202) 776-0406 Fax: (202) 776-0414 Email: afscp@aol.com. To secure information & individual assistance on AT funding issues, contact: 1-800-827-0093 (voice) 1-800-833-8272 (TDD), or (404) 919-8305 (fax)

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- Darren J. Roberts,
Staff Supervisor

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KEYBOARDS continued from Page 1

2. The student's teacher or educational professional should be consulted to help define the educational tasks that will be accomplished with the computer. A term of at least 3 years should be considered. This not only considers the expected development of the child but also the expected useful life of the adaptive keyboard selected.

3. A technology specialist with knowledge of a diverse set of adaptive or alternative keyboards should also be consulted. Discuss the strengths and weakness of each device, along with the cost, compatibility with computer hardware, and years the device will be useful.

Depending upon the individual characteristics of the student, as well as their age and specific learning program prescribed, other professionals such as a psychologist, speech-language pathologist, rehabilitation engineer, or vocational counselor could also be consulted. Parents and guardians of the student also certainly play a key role, as

they have insight into capabilities or cognitive functioning that may be overlooked.

Since this area is not deterministic, trying out possible solutions is a great idea. I remember trying to determine several years ago if our son Matthew could learn to use a mouse. (He has Down syndrome and poor gross motor and mediocre fine motor skills). Both Janet and I knew Matthew's capabilities and limitations very well but, we disagreed on whether he could learn to use the mouse and how long it would take. We decided to just give it a go and see how he did, and we were totally amazed!Today he is a real pro with a mouse!

Experimentation is a great way to get a feel for what a child can and cannot do. We can sit in conference rooms and evaluate and pontificate forever, however, spending time with the child using the technology is one of the best ways to get a better feel for what works for them.

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Where to Find Keyboards

Conferences and Trade Shows: A great way to try out different adaptive keyboards is to attend a local or regional assistive technology conference and bring your student or child along. The vendors love this hands-on approach since they can learn as much as you do.

Lending Libraries: Many organizations and agencies provide assistive technology lending libraries that allow parents and teachers to borrow the technology in order to evaluate it before buying.

Using an Adaptive Keyboard

I located a great article entitled "Using Alternate Keyboards with Academic Instruction" published by the Council for Exceptional Children. The following section represents excerpts from that article.

Successful implementation of an alternate keyboard calls

for consideration and possible modification of the academic objectives specified in the curriculum. The following examples illustrate how a combination of enabling technology, software and curriculum modifications can support educational objectives for students. The examples illustrate four major categories. Each is based on the amount of curriculum modification required and differences in academic objectives.

No Modification of the Academic Task

In a high-school word processing class, Bob, a proficient Braille writer and reader, inputs and edits text with his Braille keyboard and display. At the end of the session, he sends his work to the printer, prints the assignment, and hands it in.

Kathy, whose plans after high school include a career in computer-assisted drafting, directs the on-screen cursor with a foot-controlled keyboard placed on the floor.

Please see KEYBOARDS on Page 9

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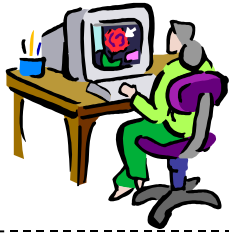
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DREAMMS Bookstore

Choice, Opportunity and Learning -- Educating children and young people who are physically disabled

by: John Cornwall

A collective exploration of choice and opportunity applied to the broad educational agenda, and then more specifically to practical teaching approaches, the learning environment and learning support. It traces the impact of developing services, attitudes and current legislation on the education of children and young people who are physically or movement disabled or who have medical conditions. Using elements of relevant research and by reviewing current methods and approaches, the book moves from the daily delivery of education through to issues of "inclusion" in schools, colleges and society.

Computer Resources for People with Disabilities -- A Guide to Exploring Today's Assistive Technology

by: Alliance for Technology Access

The computer age offers dramatic possibilities for people with disabilities. This new book by the Alliance for Technology Access shows how to use computer technology to achieve goals and change lives. This book is a comprehensive guide to approaching computer innovations. It provides the information necessary for using conventional and assistive technology at work, at school, at home, alongside other people with or without disabilities.

Planning the Curriculum -- for Pupils with Special Educational Needs - by: R. Byers and R. Rose

At a time when all schools are engaged in curriculum review, this book explores the process of developing themes of work in practical detail. Each free-standing section contains illustrative formats which can be photocopied and adapted.

DREAMMS Bookstore Order Form

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KEYBOARDS continued from Page 7

Eight-year old Juan receives A's on his arithmetic worksheets. Each weekend, his parents use an optical character reader to scan the next week's worksheets into the computer. Using his joystick and an alternate keyboard, Juan enters his answers and turns in his completed worksheet.

Some Modification of the Academic Task

Sally operates her computer through a switch controlled alternate keyboard. She is an excellent student whose "handicap" is the time and effort necessary for her to complete her schoolwork. Her teachers have shortened lengthy assignments for her. If she can do the most difficult questions correctly, she need not complete the easier ones.

While the first grade class completes a workbook lesson on matching upper and lower-case letters, Fred, with the help of a mini-keyboard, accesses a software program. To

progress through the alphabet, he must select the letter on his keyboard that matches the one displayed on the screen.

Modification of the Academic Task with Similar Educational Objectives

As part of a middle-school biology class, the students must demonstrate the ability to use a simple microscope. In the resource room, Jim, using an expanded keyboard and customized setup, simulates the physical manipulation of the microscope with a software program.

Jake and his classmates are required to research a topic in the encyclopedia and turn in a summary of their notes. Although he cannot manipulate the pages of a book, Jake performs his research with a telecommunications program and an on-line encyclopedia, and dictates his notes into a tape recorder.

Please see KEYBOARDS on Page 11



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CONFERENCES

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Event: 5th Symposium on Literacy & Developmental Disabilities

Location: Chapel Hill, NC

Information: 919.966.7486

Date: February 15-17, 1996

Event: Florida Assistive Technology Impact Conference (FATIC)

Location: Orlando, FL

Information: 813.872.5281

Date: March 6-9, 1996

Event: 1996 LDA International Conference

Location: Dallas, TX

Information: 412.341.1515

Date: March 19-23, 1996

Event: CSUN, Technology & Persons with Disabilities

Location: Los Angeles, CA

Information: 818.885.2578

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KEYBOARDS continued from Page 9

Modification of the Academic Task with Different Educational Objective

John, enrolled in a computer class with age-appropriate peers, has neither the physical nor cognitive ability to follow the standard Introduction to Computers curriculum. Instead, he uses an alternate keyboard and software designed to teach beginning computer skills to younger children.

Laptop Computers

The laptop portable systems of non-ambulatory students may be carried under or behind the wheelchair seat, embedded in a laptray, or mounted to the side of the chair. The power jack receptacle should be located for convenient recharging or operation off the electrical outlet. The angle dependent LCD screens of laptop systems necessitate careful positioning and diffuse lighting to prevent glare and to increase visibility.

Stationary Computers

The needs of the student, as well as the purpose and frequency of use, determine the placement of a stationary computer system. Some children may find it easier to access computers placed on or low to the floor. In the

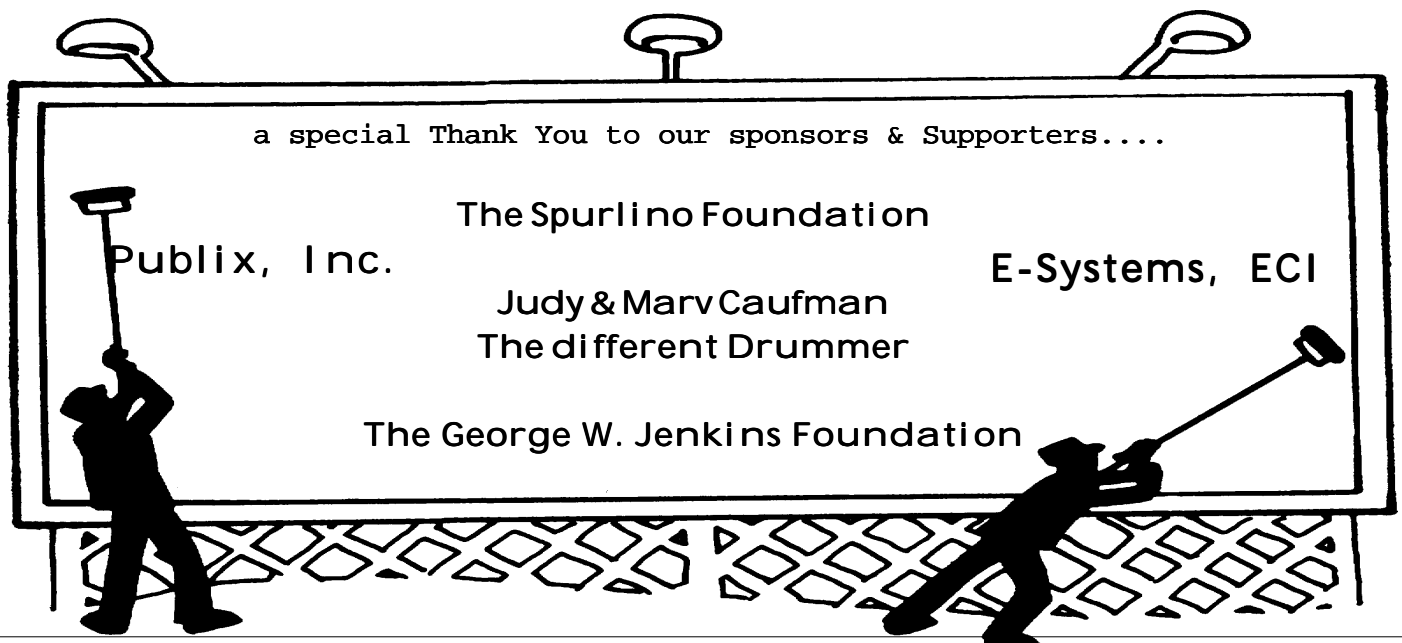
home, resource room, or computer lab, computers arranged against the wall maximize use of space, conceal unsightly cables, and provide access to electrical wall outlets.

A student who frequently uses a computer throughout the school day may need a system on his or her classroom desk to participate in classroom activities. Avoid traditional wheelchair computer furniture with high backs and sides; these make it difficult for the student to see and be seen.

Conclusion

Alternative and Adaptive keyboards when selected and used properly can provide greater access, independent control, improved communication and greater freedom for the student. The task of selecting these devices can be difficult and time consuming. Be sure to get help from the professionals, ask lots and lots of questions, use your intuition, and most importantly, have your student try a keyboard out before making any purchase. Good Luck!

A complete copy of the Council for Exceptional Children article is contained in the *Adaptive I/O Tech Pak* available from DREAMMS for Kids. You can also obtain the article from a local university that has an ERIC database of articles. The ERIC number is ED339145. □

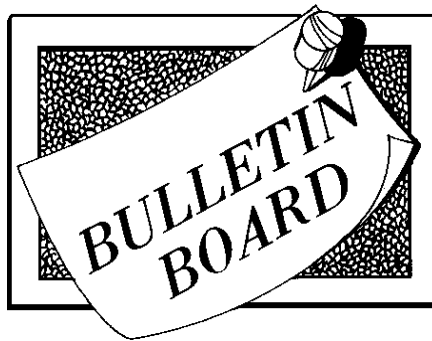


Special Needs Software

RJ Cooper & Associates has released three new titles to help fill the need for software for individuals with developmental delays and challenges. All three titles can use a simple single switch as the input device, as keyboards and mice may prove a barrier for the cognitive abilities of the user.

Teenage Switch Progression uses full-screen simulations, complete with age appropriate music and humor to teach cause/effect, and progress to timed and on-purpose switch interaction. *Early & Advanced Switch Games* is a collection of 19 activities starting at basic cause/effect, moving through following directions, and culminating at using a switch to match and select things. *2+2* is a large print, talking math fact program which lets the caregiver/teacher put in lists of problems, record the problems in their own voice, and then drill and test these facts using a unique errorless learning method. The person with special needs can use a standard keyboard, or a single switch if they are physically disabled.

All three titles are available for Macintosh or Windows and are \$89 each. Free demos are available through RJ Cooper & Associates. (RJ Cooper & Assoc: 800.RJCooper)



Strategy Games of the World

Edmark Corporation, a leading developer of educational software for children, introduces *Strategy Games of the World*, innovative new educational software designed to help 3rd to 8th grade students build a rich personal set of strategies they can use to solve problems in academic subjects and throughout life, and develop a variety of problem-solving strategies they can use everyday. Centered around three classic games that are fun and easy to learn - Mancala, Nine Men's Morris and Go-Moku, *Strategy Games of the World* also features inspiring strategy-building components including interactive Strategy Coaches, Real World Videos, Multimedia Game Guides and more. *Strategy Games of the World* is available on CD-ROM for Macintosh, Windows 95 and Windows 3.1 computers for \$69.95. As a limited time introductory offer, customers who purchase the product will receive any other award winning Edmark title free.

(Edmark Corp: 800.426.0856)

Mystery Math Island

Lawrence Productions, Inc. announces the release of its latest hybrid CD-ROM program, *Mystery Math Island*. Students search for buried treasure in this paradise while solving a variety of mathematics problems. Designed for students in grades three through eight, easy, medium, and hard problems help the program grow with students' competence. Developed and tested to parallel the NCTM national mathematics standards, *Mystery Math Island* is a sure-to-please learning adventure. High scores and student progress are saved, so parents, teachers and students can print the results and keep them as a record of achievement.

Students improve in six areas of mathematics: geometry, measurement, data, number sense and operations, patterns and problem solving. Working individually or in groups, learners recognize solutions, improve reading comprehension skills and enjoy working with numbers. Accumulated gold allows students to buy the correct tools to "dig" their treasure up.

Mystery Math Island is available as a single CD-ROM for Macintosh and Windows. The home version is \$59.95, the teacher version is \$69.95, the lab pack for schools is \$149.95, and a site license is \$699.00

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