DOCUMENT RESUME

ED 453 633 EC 308 557

AUTHOR	Kelker, Katharin A.
TITLE	Assistive Technology for Young Children.
INSTITUTION	National Early Childhood Technical Assistance System, Chapel Hill, NC.; Federation for Children with Special Needs, Boston, MA.
SPONS AGENCY	Special Education Programs (ED/OSERS), Washington, DC.
PUB DATE	1993-00-00
NOTE	6p.; Published with "Coalition Quarterly." Theme issue.
CONTRACT	HS-91-01-1001
AVAILABLE FROM	National Early Childhood Technical Assistance System (NECTAS), 137 E. Franklin St., Suite 500, Chapel Hill, NC 27514-3628. Tel: 919-962-8426; Tel: 877-574-3194 (TDD); Fax: 919-966-7463; e-mail: nectas@unc.edu; Web site: http://www.nectas.unc.edu.
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	Early Childhood Bulletin; Spr 1993
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Appropriate Technology; *Assistive Devices (for Disabled); Child Development; Computer Assisted Instruction; *Computer Uses in Education; *Disabilities; *Early Intervention; Family Involvement; Individualized Family Service Plans; Infants; Play; Preschool Education; Quality of Life; Toddlers; Toys
IDENTIFIERS	Individuals with Disabilities Education Act Part H

ABSTRACT

This issue of the "Early Childhood Bulletin" explains the developmental and learning implications of play for very young children and outlines ways in which assistive technology can open doors to play for children with disabilities. The importance of incorporating assistive technology into a child's early intervention program through the Individualized Family Service Plan (IFSP) is discussed, and definitions for related terminology from the Individuals with Disabilities Education Act (IDEA) is included. (SG)

COALITION QUARTERLY

EARLY CHILDHOOD BULLETIN

SPRING
1993

ASSISTIVE TECHNOLOGY FOR YOUNG CHILDREN

By

KATHARIN A. KELKER

Coalition Quarterly

EARLY CHILDHOOD BULLETIN

News by and for Parent Members of State Interagency Coordinating Councils

Spring Prepared by Parent Component Staff of NEC*TAS • Janet R. Vohs, Editor 1993

ASSISTIVE TECHNOLOGY FOR YOUNG CHILDREN

By Katharin A. Kelker, Executive Director

Parents, Let's Unite For Kids (PLUK), Billings, Montana
TAPP Focus Center on Technology

PLUK, the Parent Training and Information (PTI) project in Montana, is one of three TAPP Focus Centers providing specialized technical assistance to PTIs. Katharin Kelker, PLUK's Executive Director and founder, has recently received her doctorate in education from Montana State University. Kathy is a nationally recognized speaker on assistive technology and its implications for learning and IEP and IFSP development.

Play, it is often said, is the work of children. Play is the natural way growth and development occur, and the way children learn about their world. When infants become toddlers and preschoolers, play takes on an added dimension as experiences shared with age peers form the basis for establishing relationships. Common experiences strengthen these ties over time, as children and families form themselves into communities. Until very recently, barriers, both attitudinal and physical, prevented many children with disabilities from engaging wholeheartedly in this crucial self- and community-building activity.

When Congress first passed P.L. 99-457, the law authorizing early intervention programs as part of federal special education law, one of the key purposes cited was to prevent institutionalization and segregation of people with disabilites, and by extension, to promote inclusion of people with disabilities as part of the fabric of everyday life. Creating and supporting opportunities for children to play, alone and together, is an essential first step toward achieving that purpose.

Assistive technology is a *new* service recently added to the array of early intervention services listed in Part H of the Individuals with Disabilities Education Act (P.L. 102-119). This article describes ways assistive technology can open doors to play, and explains the developmental and learning implications of play for very young children.

Molly, nine months-old, has a beautiful smile and curly black hair. She has just learned to roll over from back to front, and is becoming more aware of her environment every day. Although Molly has some significant delays in her physical development, she has a hearty cry and is begining to experiment with other sounds. Her muscle tone is weak, yet she moves her arms and legs as vigorously as she can and reaches out for objects brought near her. Molly has limited vision but she is alert to sounds in her environment and highly responsive to her mom Ellen, dad Jeff, and the family dog Trooper.

Molly has made tremendous progress in her early intervention program which began soon after she left the hospital when she was three months old. From an infant who had to use every bit of her energy and resources to survive and establish her health, Molly has grown to become an active, alert nine-month old. Though delays in her development are obvious, Molly continues to grow and learn at a rapid rate.

Molly's occupational therapist is helping define possible next steps and has suggested that Molly begin to use some assistive technology. Ellen and Jeff have never heard of assistive technology. It sounds ominous to them, reminiscent of all the tubes and gadgets that were used on Molly when she was in the intensive care unit. Much to their surprise, when the occupational therapist met with them to talk about assistive technology, the first thing she showed them was a typical toy for an infant, a mechanical stuffed dog, fitted with a switch.

Molly loved the dog the minute she touched it. When properly positioned in her infant seat, she could see and touch the dog on the table in front of her. Ellen and Jeff talked to her about the toy dog. They showed her how the toy dog was like the family dog Trooper. They operated the dog by hitting a large red switch. Molly laughed in delight. Jeff placed Molly's tiny hand on the red switch and helped her to push. The stuffed dog leaped, barked, and flashed his eyes. Molly squealed and waved her arms. Jeff repeated the process with Molly's hand several times until Molly hit the switch unaided and the dog performed.

Thus Molly began using assistive technology to interact with her environment and to learn about the world through discovery and experience. Fortunately for Molly and other infants and toddlers who have disabilities, assistive technology was added to the array of early intervention services listed in Part H of the Individuals with Disabilities Education Act when it was amended in 1991 (P.L. 102–119). Its inclusion in the law reflects the critical importance of these services to some children and their families.

Part H also requires that early intervention services be provided to the maximum extent appropriate in natural environments, including the home and other places in the community (e.g., day care) where children without disabilities participate. This requirement means that assistive technology devices and services could accompany the child from home to day care or other settings. In addition, Part H emphasizes the importance of family participation in assessment, so family members could certainly be involved in the training and support needed to tailor the assistive technology for the child.

Individualized Family Service Plan

The key to incorporating assistive technology into a child's early intervention program is the Individualized Family Service Plan (IFSP). The IFSP includes: (a) the child's present level of development; (b) the family's concerns, priorities and resources relating to enhancing the child's development; (c) the outcomes expected to be achieved for the child; (d) a statement of the early intervention services to be provided; (e) projected dates for the starting of services and anticipated length of such services; (f) the name of the service coordinator; and (g) steps to be taken to support transition. To make a case for including assistive technology in the IFSP, it is important to describe the developmental task the child needs to learn and how technology will help the child achieve this particular goal.

Play, Toys, and Computers

Play is an important part of every child's psychological, physical, and emotional development. For children with cognitive, physical, or sensory impairments, significant barriers may prevent play and thus deprive them of opportunities to learn. Assistive technology can enhance development by making exploratory play possible and by making more toys and objects available. It can increase opportunities for infants and toddlers with disabilities to play with other children and develop cognitive patterns and motor control as other children do—through play. Assistive technology can assist children with disabilities to develop in any or all of the following areas: communication, sensorimotor, organizatonal skills, and fine motor skills.

Assistive Technology and Developmental Tasks

Assistive technology can help children with disabilities accomplish certain developmental tasks. The technology should be matched carefully to the new task so the child will not be frustrated by technology that is either too easy or too difficult.

For most children early play consists of coordinating hand and eye movements in grasping, mouthing objects, examining objects visually, and listening to the sounds they make. A child who cannot reach or perhaps even see objects nevertheless needs to play with them in a similar manner. Sitting supports can be modified to put toys or objects within easy reach by attaching a hoop above the child's seat or clamping toys to an infant seat or highchair tray. Toys and objects should be available in all the child's settings, such as a mat on the floor, a highchair, the stroller, the crib and so forth. Attaching toys within easy eye gaze or reach can be achieved through ingenious use of clamps, velcro strips, or crib gyms.

In the next developmental step, mobility—starting with crawling, followed by standing and walking—becomes an important part of play. Children who are becoming independently mobile learn about objects and their relationships to them by maneuvering about and "getting into everything." For children who cannot crawl or walk, all sorts of apparatuses are available (e.g. walkers, slings, platforms on casters) to allow them to move about on the floor. With a larger environment to explore at will, children will contact many new objects and learn new concepts and relationships.

Another developmental task involves cause and effect—that is, learning that a particular action causes something else to occur. When children have physical limitations and little volitional movement, opportunities to learn cause and effect can be quite limited. Battery-operated toys, specially designed or adapted as needed, can be excellent teaching tools. When such toys are connected to switches, the child can learn through practice that hitting the switch causes the toy to respond. Once the child understands cause and effect, any number of toys and pieces of equipment, including tape recorders, record players, television, music boxes, radios, remote-controlled toys, and mechanical toys like racing cars, tin soldiers, or

dancing dolls, become accessible.

The skills developed while playing with mechanical toys can then be transferred to operating a computer. The child learns that using a particular access device (e.g., touch window, joystick, switch, special keyboard) causes certain things to happen on the computer screen. For children who cannot see, the computer can be operated with voice-equipped software that tells the child what is happening. When the child has transferred the concept of cause and effect to the operation of the computer, a wide variety of early learning software, including applications for picture, letter, and number recognition; simple word processing programs; and activities for matching colors, shapes and so forth, become usable. The child can also turn the pages of computerized books as they are read aloud. Making the leap from switch toys to the computer opens up nearly endless possibilities for the child to learn both visually and aurally.

Mobility becomes another crucial concern as children develop and social interactions with other children take on greater importance. Children with disabilities want to be able to keep up with their friends at play, and it is through these interactions and shared experiences that they will strengthen their friendships and develop coordination and communication skills. To be active participants in outdoor play, children may require modifications to their tricycles or big wheels. Some children do well with hand-powered cars or trikes. Self-propelled devices can give children independent mobility thus enhancing motor as well as social and cognitive functions.

Summary

For infants and toddlers with disabilities, assistive technology is not a luxury. It may be the only avenue which will allow them to participate in activities typical for their age and necessary for their growth and development. Assistive technology can help bypass obstacles and enable children to explore their worlds. Through exploration, children learn about the characteristics of objects and their relationships to each other. Mobility allows for greater independence, giving children more opportunities to play with their peers. Social and communication skills are learned in the process of making friends and being part of the community. Technology can make the difference between leading a passive, isolated life or an active, participatory one. The more experiences a child has, the more the child learns. Assistive technology can help children have more and better experiences, thus helping them to learn and grow toward reaching their maximum potential.

Molly's first experience with a switch toy was her first step toward greater independence and control through the use of appropriate technology. Using technology to remove barriers and enhance learning can continue as Molly progresses through school and throughout her adult life. For Molly and other children, beginning early with the right technology is the key to making the most of their capabilities and unique potential.

FOR MORE INFORMATION. . .

For a list of adaptive devices for infants and toddlers, selected examples of early learning software, and Resources and a Bibliography, contact Kathy Kelker at Parents, Let's Unite For Kids (PLUK), 1500 North 30th, Billings, MT 59101–0298

Telephone: (406) 657–2055
FAX : (406) 657–2037

From IDEA: Useful Definitions

§300.5 ***Assistive technology device*** means any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of children with disabilities.

§300.6 ***Assistive technology service*** means any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device. The term includes—

(a) The evaluation of the needs of a child with a disability, including a functional evaluation of the child in the child's customary environment;

(b) Purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by children with disabilities:

(c) Selecting, designing, fitting, customizing, adapting, applying, retaining, repairing, or replacing assistive technology devices;

(d) Coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;

(e) Training or technical assistance for a child with a disability or, if appropriate, that child's family; and

(h) Training or technical assistance for professionals (including individuals providing education or rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of children with disabilities.

Federal Register, September 29, 1992. 34 CFR Parts 300 and 301, Vol. 57, No. 189; p. 4–4801.

Other Resources

- Projects in forty-two states are funded by the Technology–Related Assistance for Individuals with Disabilities Act of 1988 to promote awareness and utilization of assistive technology devices and services for persons of all ages. For more information, contact: RESNA, 1101 Connecticut Ave., NW, Suite 700, Washington, DC 20036. Phone (202) 857–1140 (Voice/TDD).
- A national network, the Alliance for Technology Access, sponsors community–based computer resource centers and technology businesses in many states. Contact ATA, 1307 Solano Avenue, Albany, CA 94706–1888. Phone (510) 528–0746.

NETWORKING TELECONFERENCE for ICC PARENTS

As part of our technical assistance to ICC parents, NEC*TAS intends to schedule another topical conference call for late July.

What would you be interested in discussing?

- ☐ Inclusion of your children in community activities and settings?
- ☐ Orientation of new member to ICC?
- ☐ Outreach to families?
- ☐ Introduction to Partnership Conference?
- ☐ Other _____

Please fill out this response form and mail or fax by July 8 to:

Evelyn Hausslein, Federation for Children with Special Needs
95 Berkeley Street, Suite 104
Boston, MA 02116
Fax (617) 695–2939

Upcoming Meetings

PARTNERSHIPS FOR PROGRESS

Aug. 1 — 3, 1993 —Arlington, Virginia

PLANNING FOR INCLUSION: Making the Dreams Happen

Sept. 28–30, 1993 —Scottsdale, Arizona

See your ICC Chair and/or Part H Coordinator for more details.

This Bulletin is prepared by the staff of the Federation for Children with Special Needs who participate in the National Early Childhood Technical Assistance System (NEC*TAS), which is funded through the U.S. Department of Education's Office for Special Education Programs (OSEP), Early Education Program for Children with Disabilities, under contract no. HS–91–01–1001 awarded to the Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill. Grantees undertaking such projects under government sponsorship are encouraged to express their judgment in professional and technical matters. Points of view or opinions, therefore, do not necessarily represent the Education Department's position or policy.

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

REPRODUCTION BASIS

☐ This document is covered by a signed "Reproduction Release (Blanket) form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☑ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").