

Expanding Technology Access for Adults with Developmental Disabilities at F·E·G·S Health & Human Services Network

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Introduction

New technologies that have become integrated into all facets of society present a multitude of challenges and opportunities for human services providers and the consumers they serve. The mission of F·E·G·S Health and Human Services System (F·E·G·S), has always been to help individuals reach their highest level of achievement, at work, at home, and in the community. To carry out this mission today requires setting new program goals to help reduce the digital divide for our consumers. F·E·G·S enters the 21st Century committed to finding new ways of creating synergy between technology and health and human services to make sure the individuals we serve are able to be full participants in the digital age.

Through our partnership with IBM over the last ten years, we have been able to introduce thousands of F·E·G·S consumers to learning technologies that can help them achieve their goals. Pilot projects with IBM have brought innovative literacy and language software, web translation software and assistive technology to F·E·G·S consumers in employment, training and literacy programs, as well as in programs for adults with developmental disabilities. In addition, every day at IBM Family Learning Centers in Long Island, F·E·G·S consumers use state-of-the-art technology to pursue goals in employment and education.

Each year F·E·G·S serves some 100,000 individuals, approximately 9,000 each day, through a network of employment, career, training, behavioral health, developmental disabilities, home care and family services programs which operate in over 300 locations throughout metropolitan New York. Daily, over 1400 F·E·G·S consumers are adults with developmental disabilities. Developmental Disabilities (DD) are a variety of conditions that include autism, cerebral palsy, epilepsy, mental retardation, and other neurological impairments. Individuals with developmental disabilities may have cognitive or physical impairments or a combination of both. They may have communication impairments and need to use augmentative and alternative communication, such as sign language or communication augmentation devices to express themselves. Although these individuals face multiple challenges, advances in technology are providing new opportunities for adults with DD to learn, work, communicate and independently access resources and information.

Why is access to technology important for adults with Developmental Disabilities?

Adults with DD can benefit from having access to quality, current technology in numerous ways. Using technology, DD programs can help consumers achieve new goals in speech, literacy, memory, concentration, independent living, social development and communication, among other significant cognitive milestones. Technology, especially the Internet, gives adults with DD access and exposure to the world outside of their day programs, homes and/or residences. These achievements are especially important now, as adults with DD are increasingly being mainstreamed into the workplace.

While technologies exist today that can reduce barriers to accessing digital information and resources, a 2000 report by the Department of Commerce showed that close to 60% of individuals with disabilities have never used a computer. F·E·G·S is committed to integrating technology into educational, vocational and rehabilitation services to help decrease this segment of the digital divide.

At F·E·G·S, observing the activity in one of the DD program computer labs attests to the importance of providing access to information technology to adults with DD. Since the labs upgraded equipment and software and began integrating Web-based activities, they have become some of the most popular classrooms in the programs. Instructors and Direct Support Staff report that consumers are requesting more and more time working with computers. Instructors have also observed that the consumers have a greater awareness of the Web as a valuable resource for both personal and educational purposes and that their increased use of and comfort with computers has had a direct and positive effect on their self-esteem.

On the programming end, the instructors have been excited by the expanded and creative opportunities that computers and the Web bring to their lesson planning. They especially like the way the integration of the Web into DD programming has given them new tools for personalizing instruction to the consumers' individual interests. The instructors have also found that using the Web can help them prepare the consumers for field trips. Before a trip, some instructors will lead the consumers through a series of online activities, including mapping, researching bus or subway directions and visiting the field trip location's web site. This additional preparation has helped the consumers feel more comfortable traveling to new places. The increased integration of technology into DD programming has significantly expanded the learning resources the instructors can use to create exciting new educational opportunities for adults with DD.

Software Design Requirements

Many software programs exist that have been developed specifically for adults with DD. The problem with much of this software is that the content and graphic design is too juvenile or the system/navigational design is too complex. It is difficult to find software developers that understand how to present adult-appropriate content with simple, but respectful, design. Some of the most successful programs are those that add an assistive frame around non-specialized content. These programs do not simplify content, but they simplify the way content can be presented, giving users independence, flexibility and control of the way they access information.

Successful software programs for adults with DD need to be flexible – to accommodate a range of special needs; personalized – to build comfort with the computer; user-controlled – to provide opportunities for users to make choices based on their interests and needs; interactive – to keep users engaged; and meaningful – dealing with real-life issues. The software must also have audio narration, since some users will have limited to no literacy skills.

Content Requirements

For instructional software that teaches particular topics and skills (as opposed to software that adds assistive tools to any content), the following content is valuable for adults with DD:

- Transportation and Travel
- Health and Hygiene
- Money Management and Finance
- Communication
- Home Management
- Self Care
- Recreation
- Vocational Management
- Adaptive Behavior

Instructional Software

Two of the instructional software programs that are used frequently and successfully in F·E·G·S DD programs support consumers' learning of how to identify coins and paper currency in the context of shopping. As the consumers learn how to identify money, make purchases and count change using a range of approaches, the software programs provide an important opportunity to practice and strengthen these skills. These programs have been successful because the graphics are age-neutral, the instructional design is simple and the purpose of the activity is important to the consumers, who connect the ability to manage money to greater independence.

Web Adaptation

Another application that has been successfully implemented in F·E·G·S DD programs is IBM's Web Adaptation software. Web Adaptation is, essentially, an assistive Internet browser with preferences that the user can save. Features include font size, style, spacing, page layout, contrast, image control and speak text. Among our consumers, the speak text function has been the most valuable, since many have limited literacy skills, but, nonetheless, a strong interest in accessing information online.

Since each user's preferences can be saved, using Web Adaptation personalizes the Web browsing experience, one of the important features for successful software design for this population. Using Web Adaptation, consumers have learned how to independently get

online and navigate through their favorite Web sites. They have pursued independent projects on topics of interest, including fishing, cooking, holidays and music. The instructors have reported that the consumers feel proud to be able to “surf the Web” just like other members of their families and communities.

Tech 4 Everyone

A new assistive technology system that we are just in the process of implementing at F·E·G·S is called Tech4Everyone (T4E). T4E consists of an assistive workstation, with an adaptive keyboard and mouse, touch screen monitor and, more importantly, an adaptive operating system that creates a personalized, interactive interface with a customized suite of software applications. Displayed on the monitor when the consumer enters the classroom are photographs of each of the students in the class. To access his/her personalized interface, the consumer clicks on the photo of his/herself.

The consumer’s personalized interface has simple, visual cues to help him/her access the different types of software available for his/her use. The program categories include: creativity, reading, games, life skills and the Web, and include innovative ways to integrate photographs that consumers take with a digital camera into several of the activities, across categories. The T4E system administrator can integrate any software applications into the system, so users are not limited to the applications that come bundled with T4E, allowing for further customization.

The power of T4E is its high level of personalization for each user and its simplification of the computer system interface and navigation, without sacrificing breadth or depth of content. We are optimistic about the implementation of T4E, especially in its potential to bring computer access to adults with DD who are less capable.

Future Directions

Future directions in assistive technology will look increasingly like accessible building design. To help individuals with disabilities gain access to public buildings, the workplace, transportation, etc., ramps, specialized elevators and other assistive architectural structures and devices were designed. Once inside, individuals with disabilities have equal access to information, resources, products and services. Likewise with assistive technology - innovative design will focus less on designing specialized content and more on developing better and better on-ramps to digital information and resources. The content exists, just like the office building, the library and the public bus existed before they became accessible. The challenge and the opportunity is in developing more ways to help individuals with developmental disabilities in accessing the content. Examples of existing applications like Web Adaptation, Tech4Everyone, Cast E-Reader and Write Outloud demonstrate the power and the possibilities of assistive technology design along this paradigm.