Technology and Occupation: Contemporary Viewpoints

The Role of Occupational Therapy in a Developmental Technology Model

Occupational therapy and technology have had an intimate relationship for 80 years. Since the inception of occupational therapy, technology has frequented the professional literature and demonstrated its integral contribution to optimizing occupation. Technology has also had a substantial effect on defining the role of occupational therapy practitioners. Early occupational therapists needed mechanical aptitude to work with manual-driven saws, sanders, and drills. Today, occupational therapy practitioners must be proficient with a variety of assistive technologies. Splints, wheelchairs, adapted kitchen utensils, and augmentative communication devices are all tools for therapists and clients. This historical symbiotic relationship between occupational therapy and technology poses the questions, “Where is technology going?” and “How will technology affect occupational therapy theory and practice?”

In recent years, occupational therapy literature has shown a heightened interest in technology. Although the crystal ball is fuzzy, we see outlines of the future around us. The following example describes a discovery experience related to technology. This event suggests the maturing role of the accessible environment evaluator and designer.

The Story: Access Audits

At the University of Wisconsin–Milwaukee, we have been funded as a national model demonstration activity called Project IMPACT (Integrated Multi-Perspective Access to Campus Technology; Smith, Stanley, & Edyburn, 1998). Over the past 2 years, we have encountered a phenomenon that suggests that there may be developmental phases of interaction between persons with disabilities and the environment. These phases help to define the role of occupational therapy—and other key team disciplines—in helping to improve the participation of persons with disabilities in their environments.

Although the underlying concepts of environmental accommodation are considered common sense in occupational therapy thought, discovering how these concepts fit together has been enlightening. This story illustrates the A3 model and clarifies one aspect of how technology, the environment, and persons with disabilities fit together in a disablement model. This A3 model is consistent with that promulgated by The Institute of Medicine (Brandt & Pope, 1997).

In 1998 and 1999, teams of occupational therapy students at the University of Wisconsin–Milwaukee were assigned to perform “access audits” on campus (Smith, Edyburn, & Silverman, 1999). This task was part of a course project to learn and apply measurement theory and methods while performing a real-life environmental evaluation. Audit teams were instructed to examine a target service or physical area on campus to evaluate its accessibility for persons with disabilities.

As often happens, a few days after the assignment was described, students returned to ask the professor for clarification. The questions and subsequent discussion took an interesting direction. More than one audit team came back questioning the essence of the assignment. They queried, “You wanted us to go out onto campus and examine our audit target for its accessibility, correct?”

“Yes,” replied the professor.

“You also told us to go investigate and locate resources that we did not have in hand that were relevant to measuring accessibility and how accessibility is accomplished, correct?”

“This is correct,” replied the professor.

“Well,” the students explained, “we discovered a great service on campus. We found this group of persons who..."
Accessibility Center. Every day, these persons work to serve the needs of occupational therapy students with disabilities. If a student with a disability needs a tutor, a notetaker, or an interpreter or requires special assistive technology, adapted test-taking situations, textbook readers, or an array of other interventions, the Student Accessibility Center will provide these. So, we are not sure what we are to do. Our audit would reveal that the assigned examination target is fully accessible because of the Student Accessibility Center. 

We discovered that the word accessibility was misleading. The name Student Accessibility Center is a misnomer. The center does not make the campus accessible. Rather, it helps students accommodate to the inaccessible areas of campus. The professor needed to differentiate between the terms accommodation and accessibility. These conversations evolved into an important new understanding for the professor and students. It appears that accessible physical and service environments move through accessibility phases. These phases are (a) advocacy, (b) accommodation, and (c) accessibility.

Advocacy is the stage in which a person with a disability identifies the need to access an environment or obtain services but finds that he or she cannot do so. The person then either self-advocates, or another advocates for him or her, so that he or she may function in the targeted environment. As an example of advocacy, a person in a power wheelchair might want to shop in a store. To obtain access, he or she could call out, bang into the door, or block the door until someone came to the person’s aid and let him or her in.

Accommodation is the second phase during which it is understood and somewhat expected that a person with a disability may need some services or access to an environment. Therefore, a service is provided to accommodate individual needs. In the previous scenario, the store owner, now aware that somebody would on occasion need help getting into the door, might install a doorbell and a “Please Buzz” or a “Call for Assistance if Needed” sign. This would make the environment a bit friendlier and accommodate individual needs. Accommodation, however, falls one step short of accessibility.

Accessibility is the third phase of creating accessible environments. Although accommodation tends to occur as an offer of services to persons with disabilities—such as can be found through the Student Accessibility Center—accessibility is usually provided by upfront engineering and design of the physical or service environment. In the accessibility phase of our shopping scenario, a power door is designed and installed for entry into the store. Now, all persons can enter and exit in the same manner, regardless of ability. This is the concept of universal design.

In a truly accessible environment, the person with a disability has no need for an alternate service or location. He or she can perform the activity at the same cost and in the same time frame as persons without disabilities.

These three phases constitute a continuum. There are hybrids and situations that fall in between. For example, the power-entry door, that appears to be accessible at first glance, requires that one press a switch to manipulate it. Even though most people would be able to press a switch, this accommodation creates an unequal entry. Pressing the switch to open the door introduces a step requiring persons with disabilities to act differently. On the other hand, ultrasound-activated automatic doors, such as those found at many grocery stores, can be used by all shoppers in the same manner. This type of automatic door meets the full criteria of an accessible entrance.

The advocacy, accommodation, and accessibility phases build the A3 model. Although the accessibility phase is ideal, advocacy and accommodation are often required. Science and design capabilities have not yet found methods for total access. Therefore, all three phases build upon one another and work together in combinations.

In the A3 model, assistive technology is primarily an accommodation and does not contribute to a more accessible environment. Most assistive technology is individually selected for specific needs, thus requiring evaluation, acquisition, fitting, and training. Usually, assistive technology must be provided by a professional, such as an occupational therapist or assistive technology practitioner.

Technology and Occupational Therapy: Beginning the Next 100 Years

As we begin the next 100 years, occupational therapy practitioners will increasingly provide major assistive technology interventions; assist persons with disabilities to adapt to technological environments; and contribute to the design of more universally designed tools, technologies, and environments. To be successful in this process, we must help prepare our future occupational therapy professionals—and bring current professionals up to speed. We need to prepare technology savvy practitioners, competent in new practice, and grounded in empirical research. In the early 1900s, the occupational therapy profession began to work with technology. Now with the millennium, we need to investigate, discover, and publish how occupation-driven human beings best interact with technology and the environment.

In this new department of The American Journal of Occupational Therapy, “Technology and Occupation: Contemporary Viewpoints,” we will examine and critique the profession and its evolving relationship with technology. As we embark on the new century, we will pull out the crystal ball and attempt to forecast our increasingly technological world and the adaptive role of occupational therapy personnel. ▲

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References


