

Matching Child and Technology Closer to a Sure Thing



In this Issue...

It has bewildered consumers, providers and schools since the dawn of assistive technology: the challenge of making sure that children with disabilities and their AT are a match. Too often, despite the good intentions of all parties, children and their AT are a mismatched set. Costly equipment is then abandoned and children and their families must begin their AT search anew. The consensus is that there has to be a better way. While there is no such thing as a sure thing in any endeavor, accurate pre-purchase specialized matching-person-and-technology (MPT) AT assessments offer children and their families a better way to match a child with the most appropriate technology. This issue examines the process of matching a child with the AT that can change his or her life for the better.

Marcia Scherer, Ph.D., MPH, CRC, FACRM Speaks

"In creating specialized MPT assessments I've found that it is most important to keep the focus on specific individuals and their unique needs," declares Marcia Scherer, founder and president of the Institute for Matching Person & Technology in Webster, NY. In addition to creating an assessment that helps match person and technology, she has authored numerous articles and books on the subject, including *Living in the State of Stuck: How Assistive Technology Impacts the Lives of People with Disabilities* (fourth edition, Brookline Books, 2005), which traces the lives and AT decisions of several individuals with disabilities beginning in 1985. Developed by Dr. Scherer, the MPT process and the measures that form the framework for the work of her institute emerged from her 1989 research study – her doctoral dissertation -- sponsored by the National Science Foundation.

In preparing her dissertation, Dr. Scherer explains, "I learned that there were very distinct differences between individuals with disabilities who were users of AT and those who were non-users." She found that there were

- 1 Matching Child & Technology:
Closer to a Sure Thing
- 3 Matching Child & Technology:
Personal Preferences Reign
An Interview with Marcia J. Scherer
- 8 Resources
- 10 Knowledge Network Members



three primary factors that must always be addressed during the MPT process:

- 1.) The characteristics, needs and preferences of each individual user
- 2.) The characteristics of the milieu, i.e. the physical and attitudinal environment in which the AT device will be used
- 3.) The characteristics of the AT devices

She began her professional career in the mental health field as a psychotherapist. She recalls, "I became a psychotherapist during the beginnings of the push for deinstitutionalization, when individuals were being placed in the community without the resources to properly support them. The result was chaos. I burned out very fast. Nevertheless, I continued to want to help people. I come from a family of healers: my mother was a nurse; her uncle was a physician. I believe that genes have a lot to do with our career choices and aptitudes."

Engineers have always been involved with AT. Gregg Vanderheiden, an engineer and founder of the University of Wisconsin's Trace Research Center, was one of the earliest advocates of Scherer's *Living in the State of Stuck*. Peter Axelson, another engineer who has made major contributions to AT, strongly advocates listening to technology users, the cornerstone of her MPT approach.

Not surprisingly, it was an engineer, her husband, who nudged her toward her eventual career. "He said to me, 'I hear you talk about people's struggles. I see in my trade magazines what engineers are creating. For the life of me I cannot see how people are going to use these products and feel good about using them. Maybe that's something you can look into.' And I did. A career was born."

As her assessment model has evolved through the years Dr. Scherer has kept in touch with the individuals she first interviewed for *Living in the State of Stuck* in the mid 1980s. "It was their idea to design a way to use the model and their experiences to help others so that, as one interviewee told me, 'they won't have to go through what I had to go through.'"

In addition to *Living in the State of Stuck*, Marcia is the author of *Connecting to Learn: Educational and Assistive Technology for People with Disability* (APA Books, 2004) and editor of *Assistive Technology: Matching Device and Consumer for Successful Rehabilitation* (APA Books, 2002). She serves on the editorial board of the journal

Disability and Rehabilitation. In 2005, she was named editor, *Disability and Rehabilitation: Assistive Technology*. Marcia is a Fellow of the American Psychological Association in rehabilitation psychology, applied experimental and engineering psychology and evaluation, measurement and statistics. She is also a fellow of the American Congress of Rehabilitative Medicine. Dr. Scherer is a professor of orthopaedics and rehabilitation at the University of Rochester.

Supporting our interview with Dr. Scherer are resources that provide information on matching consumers with assistive technology. We also feature members of our Knowledge Network. The members spotlighted this month focus on aspects of the MPT process. We invite you to contact these members for further information. Please share this newsletter with other organizations, families and professionals who may benefit from it. We invite you to visit us at <http://www.fctd.info>. We welcome feedback, new members and all who contribute to our growing knowledge base.

New Family Center Resource!

Check out our new
Assistive Technology Power Points

AT in the Classroom
Assistive Technology Laws
AT Information for Families
Funding Assistive Technology

Use them for AT orientations,
family support, IEP meetings,
training sessions and conferences.

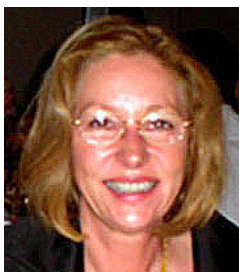
They're free and readily available at:
<http://www.fctd.info/resources/powerpoint.php>

Matching Child and Technology: Personal Preferences Reign

*An Interview with Marcia J. Scherer, President,
Institute for Matching Person and Technology,
Professor of Orthopaedics and Rehabilitation,
University of Rochester Medical Center*

"Personal preferences reign! That's a bias of my model and my measures," Dr. Marcia Scherer emphatically declares.

Beginning in 1985 with her study of users and non-users of assistive technology, which became the basis for her groundbreaking book, *Living in the State of Stuck: How Assistive Technology Impacts the Lives of People with Disabilities*, Marcia Scherer has based her matching person with technology (MPT) assessments and measurements on the unique AT needs and preferences of those who matter most in the process: the individuals, including children, who will actually use that technology.



Marcia J. Scherer

"I've learned that it's very important to create these more specialized assessments because their purpose is to focus on specific individuals," she explains. "I ask, 'What is it about this unique person that we can harness by way of environmental accommodations and technology to help that individual succeed?' That's the crux of what we do at the Institute for Matching Person & Technology."

According to Scherer, her assessments and measurements are aimed at answering the question, How can we modify or adapt the environment and the technology to each individual? The question that is not relevant to her studies, she says, is, How can we help that person conform to the demands of that environment? The difference between those two questions, she remarks, "is a very crucial distinction that my model and my measures make."

Sometimes, a Knee-Jerk Reaction

Occasionally, she notes, professionals and others "have a knee-jerk reaction to the question, How does this individual conform to the group norm? I reply, 'If that's what you're really interested in, do not use my measure because my measure is looking at this individual and how we can help him succeed according to his specific needs and preferences.'" The correct question, she says, is, How does that person compare to him or herself before using a technology to after, not to Joe Smith or Jane Doe?

Her institute has been asking that question since its inception in 1997. Says Marcia, "The Institute was formed to pro-

vide education, training and materials to help people better match individuals with disabilities and the most appropriate technology." The technology, she adds, can be assistive technology, everyday technology, educational technology, workplace technology or technology for healthcare. "There are specific training approaches, materials and measures for each of those broad technology groups."

The Underpinning of a Model

Her dissertation work, which focused on adults, had taught her that there were sharp differences between AT users and non-AT users. It was then, she recalls, "in a light-bulb-in-the-brain moment," that she recognized a triad of one-word factors that would serve as the underpinning for modeling she would construct that matched person and technology:

- Person
- Milieu
- Device

According to Marcia, a person's needs, characteristics and preferences include the nature and severity of the need/disability, the barriers and limitations that most interfere and an individual's strengths that can be applied to overcoming those barriers. "Too often we look at limitations without also appraising companion strengths," she notes.

The milieu in which a person exists and in which an AT device will be employed "is more than a physical environment." The characteristics of a milieu also consist, she explains, of the attitudes, values and priorities of the individuals who populate the physical and architectural environment.

The characteristics of the AT devices themselves, she points out, must be measured against the backdrop of the estimated 25,000 assistive technologies that currently exist, independent of their educational technology cousins and companion software programs.

The MPT Assessment for Children

Dr. Scherer's first MPT assessment was the 1989 AT device predisposition assessment (ATD PA) for adults. "After the adult assessment had been out there for awhile it became apparent that it was not meeting the needs of children who were in school."



The initial ATD PA version for children came at the request of New York State's early intervention services, she remembers. "It was designed by parents, therapists and early intervention specialists for a 0-5 age group. But that wasn't meeting the needs of the children in school. I was very for-

fortunate to get a grant from the Centers for Disease Control and Prevention to create a version for school age children in inclusive educational settings. That's what we are working on now."

Why Is a Model Important?

Marcia believes that a model, hers or another, may be essential to guiding the MPT process. The good – and rather unusual -- news is that none of the available MPT models disagree. "It's interesting that none of the available models diverge in a major way," Marcia remarks. "We may tweak and emphasize certain aspects a little differently but we are all pretty much on the same page in this field." In fact, she notes, the model creators "are all friends and work together."

Her psychology background, she concedes, encourages her to emphasize an individual's personal needs and preferences, thereby determining how the attitudes of others, the device and the physical characteristics of the environment may interfere with that person's ability to maximize a device's utility.

"Other models might emphasize something else, like self-esteem, for example, or coping." Both have been found in the literature to have a minimal influence, so focusing on marginal areas like these may inhibit the acquisition of a sufficiently broad view, she states.

Like a Pilot's Checklist

In Dr. Scherer's opinion, users of AT ought to be full and active participants in the assessment process. "Our forms were always designed for the consumer/user. In fact, the Independent Living Center here in Rochester developed a version just so consumers can go through it themselves. They don't need to discuss it with anyone else." Ideally, she says, "a provider and a consumer and a significant other, be it a spouse, parent or sibling, for example, could sit down and go through the process together." There are separate versions for professional and consumer to facilitate comparison and focus on areas of agreement and disagreement, she explains. "If consumers and professionals are not seeing eye-to-eye, there needs to be a way to highlight where perspectives differ so that technology selection or another form of support is not interfered with."

Ultimately, she says, it may turn out that technology is not the ideal answer for certain individuals. "You can use the assessment to identify other solutions, like training and need for peer support." The assessment, she insists, is both a re-



search measure and a guide, like checklists similar to those used by pilots prior to takeoff. "Each time they fly, pilots go through the same checklist to make sure they have considered everything. An MPT assessment can be used just in that format. You don't even need to score it. You only need to look at how each item is responded to."

On the other hand, she notes, there are those who may desire more sophisticated scoring. Her MPT process addresses that option. "We provide more complex scoring. We show how a child scored when she completed the form. In the case of low scores we provide some guiding questions for the professional and consumer to address so that they can strategize about next steps."

Students in Transition: Assessments Every Three Months

For children in transition, Marcia says, MPT assessments should be conducted every three months. "Children change developmentally so quickly, particularly if we provide them with a form of support like AT. When they are transitioning, assessments should be conducted quarterly. The form does not change, but hopefully the responses to it will change as the children move forward. The form will point out how well that transition is progressing."



Transition assessment was the subject of a groundbreaking doctoral dissertation prepared by Irish rehabilitation luminary Gerald Craddock: As students transition from secondary to post-secondary endeavor, including college, vocational training or employment, how do their technology needs change?

According to Dr. Scherer, Craddock's measures identified what needed to be done early on in order to facilitate transition. His measures were found to be very useful and highly predictive of how the students were going to perform. Craddock, she declares, "is about 10-15 years ahead of the field. His work in Ireland has been remarkable."

As another example she cites his study of the difficulties associated with the logistics of AT assessment administration in Ireland, where such assessments had to be conducted on site in Dublin, the nation's capital, an especially daunting requirement for children and their families.

At one point, Marcia explains, the waiting list for Dublin AT assessments was more than a year. A waiting list of that length was not acceptable to Craddock or his team. As a remedy, he and his team trained individuals with disabilities in the matching-person-and-technology process and re-

turned them from Dublin to their home counties. There, she explains, those trained individuals served as the first point of contact for people seeking AT assessments.

Called technology liaison officers (TLOs), the Craddock-trained AT assessors visited a person's home and employed the assessment process. Based on what was learned in the home-based individual assessments, the TLOs were able to phone AT assessment administrators in Dublin and discuss solution via telephone. As a result, many individuals with disabilities received more timely service and no longer needed to travel to Dublin for assessments, dramatically reducing the waiting list there.

According to Marcia, all of Craddock's methods ought to be transferable to the U.S. "Our independent living centers make the US an ideal setting in which to implement his strategies, as do our Tech Act projects and our school-based efforts. The Craddock model is excellent and very usable. Similar work is being done by others in Italy and the Netherlands."

In Case of Disagreement, Try a Partnership

Back home in the U.S., assessment disagreements between parents of students with disabilities and schools can foul the atmosphere and often result in due process, helping neither party in the long run. Instead of antagonism when disagreements erupt, Scherer recommends that a partnership be formed among the parties.



"When the measures are used it becomes clear where the parties' perspectives diverge. I favor a partnership approach in which there is an honest effort among the parties to understand each other's point of view."

The goal, she emphasizes, is to skirt an adversarial situation whenever possible. In such cases, she adds, "Once the differences are laid out, coming together with a plan to proceed in spite of those differences or to gather more data so that the differing perspectives are resolved is the best way to go."

If the partnership approach fails, she says, due process is the last stop. "It's the last resort and far from the best resort," she admits. "In most cases it is usually the child who loses out, often by a delay in services, in the swirl of ill will that exists among all parties." A partnership built around the assessment results offers the best chance of satisfaction for all the participants, she insists.

Device Trials: Use the Device in All Environments

Device trials play a critical role in MPT AT assessment, Marcia notes. "What's most important during a trial is making certain that the device is tried in all the environments in which it will be used. For example, if it's important to transport the device, then transport it. The measures are designed to compare competing devices and to narrow down the options."



In her opinion, three competing products should be the maximum tried by a potential user. "How long a trial lasts depends on the device. With some devices you'll know very quickly if it's a good match. With others a longer trial period may be in order. For most devices a week's trial should suffice."

When making a match, no particular functional challenge stands out for her "because making a match is dependent on so many factors." The challenge, she explains, is created when the consumer is unable to articulate needs and wants. "Determining those needs and wants requires more time and work."

Occasionally, however, what is needed is so clear cut that an assessment and device trial are not necessary, she says. "A walker is a good example of such a device. A physical therapist can watch a patient walk, perform a gait analysis and know almost immediately whether a walker will work or not. Sometimes, though, the physical therapist will detect some reservations on the part of the consumer about using the walker or using it in all recommended environments. The AT assessment forms are good for pinpointing that."

Major Matchmaking Barriers: Excuses, Excuses

In Dr. Scherer's long experience there are three major barriers to making a good match between an AT device and a user. All three, she says, come in the form of excuses.

"I've heard the same excuses since day one: a) 'we don't have time to do the assessment'; b) 'we're not reimbursed to do the assessment'; c) 'I already do this.' "

According to Marcia, those excuses represent the perspective of the individual uttering them more than they represent reality. "There are still professionals in the field who, as much as they hate to admit this, view themselves as being required by their profession to act as prescribers and not partners in this process."

Lack of information, she notes, is a barrier to the use of the measure, "but the barriers to technology matching go be-

yond that." Both consumers and providers, she says, often lack information about a given device and are unaware of the resources that are available.

Another barrier for some, she adds, is a lack of sufficient funding to attend conferences where much information is exchanged between professionals, providers and parents. In fact, she declares, "attendance at these conferences is very cost effective, because so many vendors are present. Professionals and parents have the opportunity to speak with vendors, to bring their problems and questions, to make a point of talking to other attendees about them."

"Everybody who attends conferences returns feeling so enriched by the experience. They say, 'It was worth five times what I or my school paid.' Conferences are usually in beautiful venues where attendees can make a vacation out of going and bring their families. I don't have a lot of sympathy for the 'penny wise and pound foolish' approach. People are not aware of what they've been missing until they attend a conference. Even for those who don't attend, there are so many ways to avoid the challenge of isolation that used to plague so many. There are many listservs available on the Internet."

Multiple Disabilities and AT Acquisition: Organize Information

Identification of appropriate AT for children with multiple disabilities requires the ability to organize information, Scherer points out.



"In all age groups we are seeing more complex medical conditions, which points to the need for organizing." MPT assessments, she adds, are effective in organizing information in three broad categories: person, milieu and technology.

"The more complex the condition, the more useful MPT information organization will be. There are more than 25,000 technology products, many with a multitude of features. Just narrowing that information down to a useful form, and matching it with the individualized needs and environments, is a very complex process that cries out for information organization in order to plan next steps and strategy."

Added to the complex stew of considerations are a multitude of contextual issues that need to be addressed within a child's home, school and community. According to Scherer, those issues can include lighting, temperature, movement from place to place, seating with peers, attention, reinforcement, the degree of anxiety or calm in a given environment,

spacing of movement, instruction and communication, noise level, lack of feedback, and the role of the environment in focusing or hindering attention. "That's just a few issues among hundreds," she cautions.

The Role of Personal Preferences

A child's preferences play a very significant role in making a successful match, Dr. Scherer says. "If a device fails to help children feel better about themselves by helping them accomplish what they want to accomplish or go where they want to go, then that device will lose its appeal."

The MPT forms, she explains, exist as a process to help spotlight a child's preferences and needs as well as potential contextual challenges. "The first form is an icebreaker, an initial worksheet to be reviewed with the consumer and a family member. For vision, for example, the question the forms pose is 'How do you think you are able to see and what is it you need to see and want to see?' Regardless of the visual acuity, and we have specific numbers for that, it's important to address 'How do you feel you're able to see and know what is going around you visually?' We leave it very open ended. Then we proceed through hearing, reading and writing, and several more areas."

The next worksheet, she continues, asks about areas where the consumer is experiencing some difficulties. "It asks, 'What have you tried that has worked and did not work?' The idea is for them to build on success and to help us discover why the consumer did not like a device or an aspect of a device. It also examines a child's strengths, so that we know what can be brought in to aid the child in her use of a technology."

Even if a great match has been made, she warns, the technology may be abandoned because of lack of support by the teacher at school or by the family at home.

"This can be a problem and when it is a problem it is a huge problem," Marcia remarks. "But the forms are designed to pick up potential abandonment related issues. Of course there is often a difference between what people say and what they do. In other words they respond one way on the forms but behave very differently when the technology is there in front of them and ready to be used."

This occasional disparity accentuates the importance of the follow-up, she notes. "If a device is not being used, the form can provide guidance as to why. Next, a determination has to be made about a possible remedy for the situation. Maybe what is required is a different form of support or a blend of support, not just different technology."

Funding as a Stumbling Block

A match might be made only to be stymied when a child's school or family is unable to afford the device. "Funding is another potentially huge problem," Dr. Scherer admits. "However, the forms can often provide a heads-up about potential cost or funding problems."



It is still the case, she adds, that a majority of products are obtained by self-pay. "Knowing at the outset what is possible is important in order to avoid recommending a device that the consumer cannot afford. How frustrating that is!"

Fortunately, she notes, funding issues arise less often now than in earlier years. "The fact is that there are more affordable AT funding options than ever before. Consumers and others have become more astute about successfully accessing those options. However, if a consumer wants a costly item, like the \$30,000-\$40,000 IBOT wheelchair, that is a different matter."

Still, however, despite the proliferation of funding options, self-pay remains the way that the majority of technologies are obtained. "The reason is that self-pay assures that consumers can obtain the device they desire if they pay for it themselves."

The Future: Professionals and Providers Want to Help

Looking ahead, Dr. Scherer optimistically envisions an increasingly fruitful and cooperative relationship between providers and professionals in the interest of helping facilitate the best match of a child with technology.

Says Scherer, "I have come to know so many providers and professionals in my years in this field and they share a common desire: they want to help. They want to see the best match of person and device -- but they have constraints with which they must live. It's just as important to know what the provider brings to the matching process, in many cases, as it is to know what the consumer brings to it."

She is confident that the available resources for consumers and providers will improve. The proliferation of productive conferences and comprehensive listservs will accelerate the availability of those resources by including an ever-increasing number of consumers, professionals and providers seeking information and opportunities for idea-sharing, she predicts.

"Everyone will be able to take advantage of online training and education. The level of competition among providers will

eventually result in more choice for consumers and lower prices as well."

On the high end of technology, she remarks, "the iPhone is supercharged with functions and features." At the lower end of the complexity scale, however, the Jitterbug is so simple that it amounts to a one-button operation. We'll see that kind of range in many other products as well, which will provide consumers a wide range of options not only in complexity but also in price."

She also predicts that the ongoing convergence of assistive and educational technology will have a positive impact on the MPT process.

"It's a lovely convergence! Add the rise in popularity of universal design to that trend. With technology convergence the idea is to assemble the best support for any given student. That is also what our measures are designed to help with: assessing the student need and then finding the best way to meet that need. The convergence is also helpful because it will result in increased communication and information-sharing among all the parties instead of retreating to traditional silos."

What will not change, she says, is the importance of the preferences and needs of individual users when matching them with the technology they need. "In my opinion, there will never be a shortcut around the individual. Listen to that person and you will get the answer you need to succeed."



RESOURCES

ARTICLES

New Technological Options for People with Physical Disabilities Through the Use of Telecommunications Equipment

By Rob Garrett

Regency Park Rehabilitation Engineering (2004)

Writes the author, Regency Park's research and development manager, "Accessing telecommunication technology and the broad range of services behind it has been an ongoing challenge for people with disabilities. With technology continually changing and mobile phones shrinking in size, the gap between people with disabilities and telecommunication technology has grown." During April-November 2003, Regency Park conducted clinical trials of off-the-shelf telecommunication options such as car kits, voice recognition and hands-free technology, as well as network features such as voice mail, that can improve the lifestyle, independence, security and social interaction of individuals with physical disabilities. Although mobile phone technologies were the focus of these trials, a personal digital assistant (PDA) and a home phone were also tried and evaluated. The trial group included people with mild, moderate and severe physical disabilities affecting movement and speech. The mobile communication solutions that the majority of participants identified as essential and/or important included speakerphone capability, voice dialing and speed dialing, voicemail and predictive text (word prediction) for faster text messaging. The overall performance and satisfaction of all of the participants taking part in the trial increased significantly. Nine out of 10 participants showed high to very high outcomes.

<http://e-bility.com/articles/telecommunications.shtml>

Predictors of Assistive Technology Use: The Importance of Personal and Psychosocial Factors

By Marcia J. Scherer, Caren Sax, Alan Vanbiervliet, Laura A. Cushman, John V. Scherer

Disability and Rehabilitation

(volume 27, issue 21 2005 pages 1321-1331)

This study was aimed at validating an AT baseline and outcomes measure – the Assistive Technology Predisposition Assessment (ATD PA) -- and quantifying the measure's value in determining the best match of consumer and AT, considering consumer ratings of their subjective quality of life, mood support from others, motivation for AT use, program/therapist reliance and self-determination/self-esteem. The study involved 150 vocational rehabilitation counselors in 25 states with one consumer each receiving new AT. Results: the ATD PA items dif-

ferentiated consumer predispositions to AT use as well as AT and user matches. Conclusion: "The ATD PA is a valid measure of predisposition to use an AT device and the subsequent match of AT and user. Rehabilitation practitioners who use the ATD PA will achieve evidence-based practice and can expect to see AT service delivery outcomes." Cost to obtain the study: \$32.

<http://www.informaworld.com/smpp/content-content=a727455894~db=all~order=page>

Computer Assistive Technology for People Who Have Disabilities: Computer Adaptations and Modifications

By Martin G. Brodwin, Elizabeth Cardozo, Tristen Star
Journal of Rehabilitation (July 1, 2004)

The authors discuss computer adaptations and alternative input devices (alternative computer keyboards, switches, mouse modifications, eye-tracking devices), alternative input processing aids (word prediction, reading and writing aids, electronic reference tools) and alternative output (motor, visual, auditory, and tactile representation) to facilitate use of computers by persons who have disabilities. The study concluded, "Rehabilitation professionals need comprehensive training in technology and how computer assistive technology (CAT) can be incorporated into rehabilitation plans and programs, especially for consumers with severe disabilities. Through a greater understanding of the adaptations that can be made to AT devices and equipment for consumers with disabilities, counselors can more readily assist in successful adaptation."

<http://www.encyclopedia.com/doc/1G1-122769211.html>

A Framework for Modeling the Selection of Assistive Technology

By Marcia Scherer, Jeffrey Jutai, Marcus Fuhrer, Louise Demers, Frank DeRuyter

Disability and Rehabilitation: Assistive Technology (volume 2, issue 1, 2007, pages 1-8)

This paper updates an earlier study entitled Framework for the Conceptual Modeling of Assistive Technology Device Outcomes and proposes a model of factors influencing consumer predispositions and provider practices related to acquiring a specific AT device, which is the starting point in the framework. The study found that the decision that a particular AT device "is an appropriate and desirable support for an individual is the result of a process which is affected by a broader societal climate that determines, in part, unique personal climates which then foster unique provider and consumer perspectives predisposing each to the selection of an AT device." Cost: \$35.

<http://www.informaworld.com/smpp/content-content=a769900720~db=all~jumptype=rss>

Delivering an AT Service: a Client-Focused Social and Participatory Service Delivery Model in Assistive Technology in Ireland

By Gerald Craddock and Lisa McCormick
Disability and Rehabilitation
(January 2002, pages 160-170)

This article outlines the development of an AT service delivery model and suggests that a client-focused social and participatory service delivery model in AT can achieve the best results for people with disabilities and their careers. The authors draw on case studies, which are part of the final evaluation report of the Aphrodite (European Horizon funded project 1998-2000) project to illustrate the success of a client-focused service. The aim of the project was to provide people with disabilities access to a local technical resource in the form of Technology Liaison Officers (TLOs). TLOs are individuals with physical disabilities, who have been trained in AT and who have achieved a certificate in AT, to act as a liaison between users and potential users of AT and the Central Remedial Clinic's (CRC) Client Technical Services (CTS) Department. Craddock has achieved recognition among rehabilitation professionals in Ireland and the U.S. for his innovative approach to a logistical bottleneck of national proportions: the need for all AT recipients to travel to the nation's capital, Dublin, for personalized assessments, a requirement that resulted in a one-year waiting list. TLOs now administer assessments in their home counties and phone the results to national headquarters in Dublin, thus eliminating the long wait for assessments and the need to travel to Dublin. Similar solutions have been developed in Italy and the Netherlands.

<http://www.informaworld.com/smpp/432725911-81328366/content-content=a713813225-db=all-order=page>

Implementing Outcomes Measurement in Assistive Technology

By Gerald Craddock
Springer Berlin/Heidelberg (2004, pages 269-279)

In this paper the author outlines the national assistive technology system in Ireland, assessing both the structural supports and barriers that are present within the Irish system. National governments throughout Europe continue to streamline their services and to monitor and measure the quality of those services. In Ireland these initiatives came at a time where the health service was in urgent need of reorganization and restructuring. Massive cuts and lack of government funding over the past three decades depleted the health care system. The outcomes of two national projects carried out by the Central Remedial Clinic's client technical services department are

outlined to show the potential positive impact of a partnership approach.

<http://www.springerlink.com/content/euubnrx5qpk9tlcw/>

Assistive Technology Assessment: A Comparative Analysis of Five Models

By Barbara E. Bromley, Ph.D.
College of Education and Integrative Studies, Cal Poly Pomona (2003)

The author compares and describes five AT assessment models, including Marching Person with Technology. She writes, "There are three major components (Milieu, Person, Technology) which are assessed using a series of questionnaires. The Milieu focuses on characteristics of the settings in which AT is to be used. The Person component provides information about the user's personal characteristics and temperament. The Technology component focuses on specific characteristics of the technology itself, including design factors and funding." The MPT offers six assessment forms as part of the evaluative process. The Worksheet for the MPT Model identifies which technologies are potentially useful for the AT user. The Survey of Technology Use solicits information about the person's experiences with technology. The Assistive Technology Device Predisposition Assessment collects information on physical capabilities, life satisfaction, feelings about having a disability, and temperament. For school-age individuals, the Educational Technology Predisposition Assessment focuses on student characteristics, educational goals and environment. The Workplace Technology Predisposition Assessment identifies areas that could inhibit the acceptance and appropriate use of new technology in vocational settings. The Health Care Technologies Predisposition Assessment addresses health care needs, including personal characteristics, characteristics of technology being considered, and attitudes. The ultimate outcome of using the MPT process is selection of an appropriate AT device that does not get abandoned prematurely.

<http://www.homemods.org/library/pages/ATAssess.htm>

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BOOKS

Assistive Technology: Matching Device and Consumer for Successful Rehabilitation

Edited by Marcia Scherer, Ph.D.
American Psychological Association (2002)

The book's contributing authors explore ways psychologists and other helping professionals can collaborate with users of assistive technology to help users maximize the benefits of their equipment. The authors' viewpoints reflect the evolutionary shift from a medical model to a so-

cial model of technology delivery, an approach that puts as much emphasis on the user's community reintegration as it does on his or her physical capabilities. This change means that those in the field can no longer focus on the delivery of technology as an end in itself, but must go one step further and partner with consumers and communities to ensure that assistive devices are put to their best possible use. This interdisciplinary book provides research-based guidance for finding the perfect match between device and consumer, including key information on personality assessment, the influence of pain, coping skills and the power of new technology and social programs. Cost: \$49.95. For ordering information contact:

American Psychological Association
Order Department
P.O. Box 92984

Washington, DC 20090-2984

Phone: (800) 374-2721 (toll free)

Fax: (202)336-5502

<http://www.apa.org/books/431667A.html>

Transition Assessment: Wise Practices for Quality Lives

Edited by Caren Sax, Ed.D. and Colleen Thoma, Ph.D.
Paul H. Brookes Publishing (2003)

This book focuses on assessment at the heart of transition planning, showing just how important it is to understand the needs and goals of young people with disabilities before planning supports to guide them into adult life. Cost: \$22.76.

<http://www.pbrooks.com/store/books/sax-5702/index.htm>

Living in the State of Stuck: How Assistive Technology Impacts the Lives of People with Disabilities, 4th edition

By Marcia Scherer

Brookline Books (2005)

Noted for her frank, analytical assessment of technology's reach and its boundaries, the author steps past technology and instead addresses those who employ it by emphasizing access, attitude and the essential "person first" perspective that is the foundation of her earlier volumes. In the latest edition of this well-regarded work, Dr. Scherer brings us up-to-date on the "battles won and battles lost" of the men and women with disabilities whom she followed closely in previous volumes. The result is a frank discussion on assistive technology from the standpoint of those who use it or have opted not to use it. Her latest volume serves as a mouthpiece for people with disabilities and an analysis of the benefits and flaws of a range of AT devices. Cost: \$30. <http://brooklinebooks.com/Merchant2/merchant.mvc?Screen=PROD&StoreCode=B&ProductCode=1-57129-098-2>

Connecting to Learn: Educational and Assistive Technology for People with Disabilities

By Marcia Scherer, Ph.D.

American Psychological Association (2004)

Designed for school psychologists, rehabilitation therapists, educators, disability support service administrators, instructional design specialists and parents of children with disabilities, this book aims to aid and simplify the selection of assistive or educational technology and the development of an instructional plan for a student with a disability. The author presents a comprehensive approach to matching the right technology with students with visual and auditory disabilities. She explores the way sensory disabilities can lead to isolation and a lack of "connectedness" and how this, in turn, leads to reading difficulties. She also provides a step-by-step model for assessing and evaluating the needs of individual students and matching them with the most appropriate technology. The book features applicable checklists and forms while providing data on the prevalence of hearing loss as well as relevant legislation. Cost: \$33.47.

<http://www.amazon.com/Connecting-Learn-Educational-Technology-Disabilities/dp/1557989826>

WEBSITES

Matching Person and Technology (MPT)

This home page for the Institute for Matching Person and Technology, Inc. outlines the Institutes activities and provides access to MPT-related resources.

<http://members.aol.com/IMPT97/MPT.html>

GUIDES

Clinicians Guide to Assistive Technology

Edited by Don Olson, Ph.D. and Frank DeRuyter, Ph.D.
Elsevier Science (2006)

This guide was assembled by Dr. Don Olson, associate professor at Northwestern University's department of physical medicine and rehabilitation and Dr. Frank DeRuyter, director and associate professor, speech pathology and audiology, Duke University Medical Center. Aimed at allied health professionals, occupational and physical therapists, speech-language pathologists, recreational therapists, nurses and nurse practitioners, the guide offers healthcare professionals specific information about AT and explains how diverse technologies can work together.

http://www.elsevier.com/wps/find/bookdescription.cws_home/691300/description#description

KNOWLEDGE NETWORK MEMBERS

The Institute for Matching Person & Technology, Inc.

The Institute is a corporation founded in 1997 by Dr. Marcia Scherer to perform matching-person-and-technology AT assessments. The MPT process contains a series of instruments – self-report checklists about consumer predispositions to and outcome of technology use – which take into account the environments in which a device is used, a user's preferences and characteristics and the technology's functions and features. The MPT process contains a series of instruments, including the following technology-specific forms:

- The *Assistive Technology Device Predisposition Assessment* (ATD PA), which helps users select AT
- The *Educational Technology Predisposition Assessment* (ET PA), which aids students in employing technology to achieve certain specific educational goals

According to the Institute, each instrument is actually a pair of instruments, one designed for the technology provider – a counselor, therapist or teacher, for example – and the other designed for the user of the technology. When combined they work together to achieve the following goals:

- Establish user needs and preferences
- The degree of match between user and provider perspectives
- Identification of mismatches between the proposed technology and a potential user in order to reduce or eliminate inappropriate use or non-use and the consequent user disappointment and frustration
- Determine of the appropriate technology from a plentiful selection of devices
- Decide the most appropriate training strategies in order to help ensure optimum user benefits from the technology.

For additional information on the Institute, contact:
The Institute for Matching Person & Technology
486 Lake Road
Webster, NY 14580
Phone/Fax: (585) 671-3461;
01-293-5933 (D-U-N-S number)
Contact: Marcia Scherer, Ph.D., founder
Email: IMPT97@aol.com
<http://members.aol.com/impt97/mpt.html>

Assistive Technology of Michigan

The organization provides a variety of comprehensive AT services, including on-site evaluations, custom design and



development, equipment recommendations and set-up and training. Follow-up services include computer access, electronic aids for daily living, AT training, computer skills training and funding consultation.

For further information of this organization, contact:

Assistive Technology of Michigan
43000 West Nine-Mile Road, Suite 113
Phone: (248) 348-7161 Fax: (248) 348- 7131
Contact: Ghassan Sourì
Email: atofmich@juno.com
<http://www.atofmich.com/>

Technology Resource Center of Marin



The Center provides AT and AAC assessments and serves as a "hands-on" open lab for educators, students with disabilities and their families. The facility also functions as a training center and is used for a range of workshops and in-services for staff, family members and students on computers, AAC devices, adapted curriculum and strategies. The Center's lending library offers educators and families software, low tech devices, adapted curriculum and resource information for checkout.

For further information, contact:
Technology Resource Center of Marin
1055 Las Ovejas, Room 5
San Rafael, CA 94903
Phone: (415) 491-6495 Fax: (415) 491-6495
Email: trc@marin.k12.ca.us
<http://trc.marinschools.org/>

North Carolina Assistive Technology Project (NCATP)

NCATP provides a range of fee-based AT services to schools and other organizations, including AT assessments, community based assessments, feature matching device and trial, training on specific devices and software and consultation services. AT assessments take place at an AT Center and involve the child, family members and related service professionals. A child

can try multiple high- and low-tech devices and can borrow devices on a short-term loan basis for in-school use. A comprehensive written report is provided. Recommendations are given for AT devices, related services and equipment specifications as well as funding sources. Cost \$475.

Community assessments are conducted at settings other than an AT Center. Settings can include home, school or workplace. The assessment is part of a multi-disciplinary approach in which devices are tailored to meet the requirements of a specific setting, task or situation. A comprehensive written report is provided. Cost: \$475.

Feature matching device and trial helps match an AT device to a child's ability. NCATP staffers collaborate with referral professionals to determine which devices to try based on a brief in-house assessment in combination with other referral information. A one-page summary of feature matching and summary of devices that meet the user's requirements is provided to the referral source. Cost \$200.

For further information on NCATP, contact:
North Carolina Assistive Technology Program (NCATP)
1110 Navaho Drive, Suite 101
Raleigh, NC 27609
Phone: (919) 850-2787 Fax: (919) 850-2792
Email: jmedlicott@ncatp.org
<http://www.ncatp.org>

Technology Access Center of Middle Tennessee

The Middle Tennessee TAC is a resource center providing AT services. Services include adapted toys, aids for daily living, communication, computer access, ergonomics, home modification, job accommodation and website accessibility. For further information about the Middle Tennessee TAC, contact:



Technology Access Center of Middle Tennessee
2222 Metrocenter Blvd., Suite 126
Nashville, TN 37228
Phone: (615) 248-6733; (800) 368-4651 (toll free)
Fax: (615) 259-2536
Contact: Bob Kibler, Director
Email: techaccess@tacnashville.org
<http://tac.ataccess.org>

Technology Access Center of Tucson (TACT)

TACT provides AT assessments and information about AT to families and others. The Center's services include assessments, community presentations, center orientations, loans of AT devices, information and referral, individualized research packets, AT demonstrations, an adapted AT lending library and an AT vendor show. The Center's Learning Lab is a cross platform network consisting of IBM-compatible and Apple computers of varying ages, speeds and operating systems designed to reflect various home, classroom and working environments. The lab's computers are combined with specialized equipment such as alternative, expanded or mini-keyboards, voice recognition software, touch windows for alternative access, single switch software for mobility in hands and arms, screen readers for visual impairments and AAC software for individuals who have lost their ability to speak. The lab offers classes, trainings and tutorials to groups and individuals on a range of AT-related topics.



For more information on TACT, contact:
Technology Access Center of Tucson (TACT)
4710 East 29th Street
Tucson, AZ 85711
Phone: (520) 745-5588, x1265
Email: tact1@qwestoffice.net
<http://www.ed.arizona.edu/tact/>

Foundation for Successful Solutions: Project T.E.C.H.

Project T.E.C.H. provides technology access and training mainly to the African American and Latino population of Los Angeles. The project offers training classes, computer donations, technical support and media services. The project has served more than 600 youths and adults since its founding in 2001. For additional information about Project T.E.C.H., contact:



Foundation for Successful Solutions: Project T.E.C.H.
2951 West 15th Street
Los Angeles, CA 90006
Phone: (323) 687-4662 Fax: (323) 735-1667
Email: info@fsstech.org
<http://www.fsstech.org/>

Assistive Technology for Kansans Project (ATK)



To help ensure the best match of AT and user, ATK focuses on three activities aimed at consumers considering equipment purchases:

- An *interagency equipment loan program* contains a variety of devices available for borrowing on a trial basis prior to purchase
- *The Kansas Equipment Exchange* offers reconditioned durable medical equipment such as wheelchairs and lifts
- An *equipment bulletin board* enables consumers to search for a broad range of items they may wish to buy to post items for sale.

For more information on ATK, contact,
Assistive Technology for Kansans (ATK)
Kansas University Center for Disabilities
2601 Gabriel
Parsons, KS 67357
Phone: (620) 421-8367; (800) 526-3648 (toll free)
Fax: (620) 421-0954
Email: ssack@ukans.edu
<http://atk.ku.edu/>

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Fax (202) 884-8441
fctd@aed.org
www.fctd.info

Did you miss the last FCTD Online Assistive Technology Institute?



Check out the transcripts of our two very informative discussions: *AT and Autism* *AT and Transition*

Discussion sub-topics include:

- Digital Technologies for Autism Research and Treatment
- Stress, Arousal, and Anxiety in ASD
- Technology for Students with Asperger's Syndrome
- Communication Strategies for Youth with Autism
- Criteria for Quality Transition Services
- State Performance Plans
- Transition in the Early Years
- Transition to Vocational and Independent Living Settings
- Transition to Post-Secondary Academic Settings

If getting smarter about assistive technology is one of your goals, the Institute transcripts make great lunch-time reading (and don't forget the "related resources" section.)

<http://www.fctd.info/webboard/archive.php>