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Considering Technology in the Occupational Therapy Practice Framework

Abstract

The Occupational Therapy Practice Framework, 3rd edition (2014), presents an incomplete infrastructure of assistive technology's role in occupational therapy. Assistive technology and device use is currently defined in "Preparatory methods" (AOTA, 2014, p. S29); however, this categorization presents conflicting information to readers. This article aims to analyze assistive technology in the definition logic rules of precision and parsimony. The classification scheme will be assessed in the logic rules of exclusivity and exhaustiveness. The results of the analysis guide the placement of assistive technology in the profession's guiding document. This may protect coverage and reimbursement, the education of clinicians, and best practice methods. With a holistic vision and scientific knowledge of disability and issues affecting daily occupational engagement, occupational therapists are trained with the necessary skills to match the individual needs of the person with available assistive technology. The Occupational Therapy Practice Framework should also reflect the technological advancements relevant to practice today.

Comments

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Keywords

assistive technology, occupational therapy practice

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The *Occupational Therapy Practice Framework*, 3rd edition (OTPF-3), is an official document to guide the occupational therapy profession in clinical practice. This document defines concepts central to occupational therapy practice (American Occupational Therapy Association [AOTA], 2014). The OTPF-3, however, presents an incomplete infrastructure of assistive technology's role in occupational therapy. The subcategory "Assistive technology and environmental modifications" is defined as

> Identification and use of assistive technologies (high and low tech), application of universal design principles, and recommends changes to the environment or activity to support the client's ability to engage in occupations. This preparatory method includes assessment, selection, provision, and education and training in use of devices. (AOTA, 2014, p. S29)

Furthermore, assistive technology is currently a subcategory of "Preparatory methods", which is defined as "Modalities, devices, and techniques to prepare the client for occupational performance. Often preparatory methods are interventions that are 'done to' the client without the client's active participation" (AOTA, 2014, p. S29).

Assistive technology (AT) has been the focus of several official documents, including "Complex Environmental Modifications" (AOTA, 2015a) and "Assistive Technology and Occupational Performance" (AOTA, 2016). In 2017, the AOTA published a fact sheet titled "The Role of Occupational Therapy in Providing Seating and Wheeled Mobility Services." This document describes occupational therapy's unique approach to wheeled mobility, which considers the person with a lifespan perspective first. This includes consideration of meaningful goals for participation, body functions, and performance skills in relationship to activity demands and environmental factors (Sparacio et al., 2017). Through this in-depth analysis, occupational therapists "fill the gap" between the person's abilities and his or her desired participation with appropriate equipment. The Accreditation Council for Occupational Therapy Education (ACOTE) has required standards that a graduate from an ACOTE-accredited occupational therapy program must be able to "select and teach compensatory strategies, such as use of technology and adaptations to the environment, that support performance, participation, and well-being" (ACOTE, 2011, p. S48).

In occupational therapy, AT is commonly used to describe the use of technology or assistive devices to improve the function, independence, and quality of life in people with disabilities (Individuals with Disabilities Education Act, 2004; Technology-Related Assistance for Individuals with Disabilities Act, 1988; World Health Organization, 2018). This term is intentionally broad and includes equipment and devices that are custom-made for a single user or mass-produced for a larger population. AT service delivery also spans across multiple disciplines. Occupational, speech, and physical therapists; inventors, rehab engineers, suppliers, and educators; and more use AT to impact change (Rehabilitation Engineering and Assistive Technology Society of North America [RESNA], 2015). The breadth of AT services provided by various professionals to meet a wide variety of goals results in difficulty arriving at consensus on a detailed definition for AT. Even the categories of AT differ among professionals in the field of occupational therapy. For example, Anson (2017) recognizes that there is variation among definitions yet settles on rehabilitation technologies, assistive technology, and universal design. Smith (2017) prefers therapeutic technology, assistive technology, environmental technology, and occupation-related technology. Cook and Polgar (2015) categorize AT as rehabilitation technologies, educational technologies, and accessible and universal design. Finally, Scherer (2005) levels AT with other technologies, including educational technologies; workplace technologies; and general, every day technologies.

The field of occupational therapy has experienced major growth and innovation in AT in recent years. Recognizing that the use of AT is highly personal, occupational therapists have studied consumer perspectives in relationship to AT outcomes, occupational justice, and the impact of specific equipment on psychosocial well-being (Arthanat, Simons, & Favreau, 2012; Lenker, Harris, Taugher, & Smith, 2013). Clinicians have also demonstrated AT's impact on specific occupations. For example, occupational therapists have shown that proficient use of AT in college can improve a student's reading, writing, note-taking, test scores, study habits, and overall satisfaction with academics (Malcom & Roll, 2016; Weigelt-Marom & Weintraub, 2018). Environmental control systems provide leisure opportunities, social participation, and autonomy to people with high-level spinal cord injuries (Verdonk, Nolan, & Chard, 2017). Smith (2017) predicts that the impact of technology will continue to grow, both in usability and integration into clinical practice. However, he cautions that occupational therapy must incorporate technology throughout education and occupational science (Smith, 2017). The OTPF should reflect the relevant technological advancements occurring in practice today. This article proposes that updates to the OTPF are needed to meet the technological needs that significantly affect daily function.

After critical analysis of textual content and classification scheme, Nelson (2006) stressed the importance of the OTPF to occupational therapy clinical practice, research, education, and communication. This analysis will examine the terms occupations and activities, preparatory methods, and preparatory tasks in relationship to AT's placement in the OTPF (AOTA, 2014). This critique will follow Nelson's suggestions to analyze textual content through the logical rules for definition, which include precision and parsimony. The classification scheme will be examined through the logical rules for classification of exclusivity and exhaustiveness (Nelson, 2006).

Precision refers to the accuracy of the label and the associated concept (Nelson, 2006). The importance of precision is elemental, "if a researcher cannot follow a rule for including or excluding a particular from a concept (as represented by a term), science is impossible, because no one would know precisely what anyone else is talking about" (Nelson, 2006, p. 514). The primary term driving this discussion is preparatory methods. The OTPF-3 describes "Preparatory methods" as interventions "done to" the client without mutual participation (AOTA, 2014). The subcategories listed underneath "Preparatory methods" include splints, assistive technology, environmental modifications, and wheeled mobility. The definition of preparatory methods is quite specific; however, consideration must also be given to the selection of the subcategories supporting this category and concept. For example, splinting is an application that is "performed on" the client to prepare for occupational performance; this subcategory is placed appropriately under the "Preparatory methods" header. However, even though the terminology and categorization of AT has not met consensus, occupational therapists believe that AT requires "active doing" on the part of the person. Universal design and environmental technology include modifications and equipment that aim to increase the accessibility of an environment with equipment or modifications (Anson, 2017; Smith, 2017). Smith's (2017) occupation-related technology refers to the "active" use of technology during daily occupations, while Cook and Polgar's (2015) educational technologies refer to technologies used with the purpose of supporting one's academic potential. Furthermore, wheelchairs may be "done to" a client when used as a positioning device to prevent loss of range and orthopedic changes; however, most wheelchairs are recommended for active use to support participation in occupational performance (RESNA, 2011). Endorsing examples of AT,

environmental modifications, and wheelchairs to explain preparatory methods leads to confusion for clinicians, educators, and researchers.

Parsimony refers to the singularity of the particulars of a term to reference that term only. In parsimony, ambiguity, overlap, and redundancy need to be considered (Nelson, 2006). Categorizing splinting, AT, environmental modifications, and wheelchairs as examples for the same category is ambiguous and does not provide a clear definition of preparatory methods. In addition, the definition fails to support the various purposes of AT, thus causing overlap into other areas of the domain and process (AOTA, 2014). To reiterate this point, consider an occupational therapy student who is teaching a client to don his socks using a sock aid. The student is unsure if the intervention should be specified as an occupation under the activities of daily living (ADL) domain, or as a preparatory method due to the client's use of adaptive equipment to complete the task. Ambiguity under the "Preparatory methods" category hinders the usability of the OTPF-3 as a guide for new clinicians.

Nelson (2006) defines the first classification system rule of exclusivity as "a lower-level category [that] must be classifiable only within its assigned higher-level category" (p. 516). Placement of AT in the OTPF-3 under the category "Types of Occupational Therapy Interventions" (AOTA, 2014, p. S29) is appropriate. The OTPF-3 describes the "intervention plan" as specifying the approaches and types of intervention that will be used during treatment to meet the client's goals (AOTA, 2014, p. S15). Buning (2014) describes AT in intervention, considering clinical use of AT with either an "occupations-as-means" or an "occupation-as-end" focus. Occupation-as-means uses AT to enable the remediation or establishment of performance skills or body function deficits, with an end goal to enable occupational performance with the least amount of external (from another person or AT) assist possible (Buning, 2014). Rehabilitation technologies provide occupational therapists with active and passive means to aid the client in reaching his or her occupational performance goals during the intervention process (Anson, 2017; Cook & Polgar, 2015). Occupation-as-end uses an adaptive or compensatory approach to meet the client's end goals of successful occupational performance by matching the person with appropriate, occupation-enabling AT (Buning, 2014). To meet the goal of successful occupational performance, intervention should focus on trialing equipment, problem-solving, training, and education to reduce the risk of equipment abandonment (Chiu & Man, 2004; Eggers et al., 2009; Greer, Brasure, & Wilt, 2012; Polgar, 2006; RESNA, 2011). AT supports the intervention process when the clinician is using a remediative or compensatory intervention approach. The functions of the various types of AT are evident in the types of intervention that occupational therapy clinicians employ.

Exhaustiveness is the second classification rule, defined as "all relevant particulars must be classifiable" (Nelson, 2006, p. 518). For analysis, Nelson (2006) reports that examples outside of the classification system (in this case, the OTPF-3) must be examined. In this discussion, the manner in which AT is referenced in federal policies and the frameworks of medical professions and similar rehabilitation sciences should be considered for thoroughness. Legislative actions are important to consider, as they control access to care on a population and individual level (McLaughlin & McLaughlin, 2015; Stanley, 2015; Stover, 2016). Health technology can be defined as "a medical device, surgical and other procedures, medical equipment, diagnostic tests, and other health care services" (Establishing a Health Technology Assessment Program, 2006, p. 2). Federal and state legislation surrounding health care manage the potential and risks for health technology in terms of cost, efficacy, safety, and effectiveness (McLaughlin & McLaughlin, 2015). Medical policies specific to occupational therapy can control access to equipment by requiring substantiated medical necessity

(Stanley, 2015; Stover, 2016). If there is not a medical necessity, then services or coverage will be denied. Occupational therapy practice differs from the legislative approach by working through the lens of the *Occupational Therapy Code of Ethics* (AOTA, 2015b). The practitioner must consider not only what is medically justified, but also what contributes to "inclusion, participation, safety, and well-being for all recipients in various stages of life, health, and illness" (AOTA, 2015b, p. S1). As policies for access to health technology change, the unique perspective of the occupational therapy profession should be voiced to support population and individual needs (Braveman, 2015; Stover, 2016). To do so, occupational therapy must embrace the concept of technology in the OTPF that aligns with the concepts in the *Occupational Therapy Code of Ethics* (AOTA, 2015b).

In the medical sector, Hofmann and Svenaeus (2018) examined medical technologies in the larger scope of illness. They defined categories of diagnostic and therapeutic technologies (Hofmann & Svenaeus, 2018). Diagnostic therapies are generally used by physicians and are considered outside of the scope of occupational therapy. However, therapeutic technologies were explained as affecting illness experiences to relieve or eliminate symptoms (Hofmann & Svenaeus, 2018). Hofmann and Svenaeus (2018) emphasize that

> New technologies not only open up new spaces of possibilities for our doings; they also make us see things in new ways, they *shape* our experiences, dominate the *goals* of human projects, changing our views on what is worth pursuing in the first place. (p. 9.)

Occupational therapy, as a client-centered profession, is concerned about the experiences of our clients and the goals that they value (AOTA, 2015b; Arthanat et al., 2012). Clinicians use rehabilitation technologies similar in purpose to the therapeutic technology described above. Rehabilitation technologies aim to affect body functions and performance skills, thereby relieving or eliminating symptoms. However, Hofmann and Svenaeus (2018) fail to include technology related to occupational performance in their classification of medical technologies.

Moving closer to the field of occupational therapy, the impact of technology should be considered from the view of the interdisciplinary team that specializes in AT. The Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) is an interdisciplinary organization that supports the provision of AT and categorizes AT by professional group and equipment focus (Professional Specialty Groups, n.d.; Special Interest Groups, n.d.). The RESNA recognizes professional specialty groups (PSGs), including educators, engineers and technologies, occupational and physical therapists, speech and language pathologists and audiologists, suppliers and manufacturers, and vocational rehabilitation (Professional Specialty Groups, n.d.). This diverse group of professionals address common themes in AT. Equipment-centered special interest groups (SIGs) include access and communication technology, accommodations, emerging technologies, and wheeled mobility and seating (Special Interest Groups, n.d.). Issue-focused SIGs include consumer access; priorities; benefits over the lifespan; and delivery, outcomes, and policy. The International SIG addresses both equipment and issues specific to international needs (International SIG, n.d.). The RESNA's categorization of professional groups and special interests acknowledge that rich collaboration occurs in an interdisciplinary team, as varieties of backgrounds and perspectives collide. The organizational structure affirms that consideration of specific equipment and issue analysis hold equal importance in AT service delivery.

The incorporation of AT in core documents of other rehabilitation science professions, such as physical therapy and speech and language pathology, should be discussed. In the scope of

exhaustiveness, this ensures that in future occupational therapy literature the classification of AT will "account for all particulars" (Nelson, 2006, p. 518). The *Vision Statement for the Physical Therapy Profession* (American Physical Therapy Association [APTA], 2014b) asserts that adopting innovation with interdisciplinary collaboration is critical to care provision and to advance the profession. Also in physical therapy, the core document guiding documentation and client management describes physical therapy's role with AT in three categories: assistive and adaptive devices; environmental, home, and work (job/school/play) barriers; and orthotic, protective, and support devices (APTA, 2014a). These descriptions specify consideration of the person's "functional activities" and environment and the fit of the AT to the person. Third, an established policy *Access to Durable Medical Equipment* supports the role of physical therapy in an interdisciplinary process to assess need, recommend and fit devices, and advocate to protect client access to equipment (APTA, 2013). The American Speech-Language-Hearing Association (ASHA) defined "Modalities, Technology, and Instrumentation" (2016, p. 2) as one of the eight domains of speech-language pathology (SLP) service delivery in the revised *Scope of Practice in Speech-Language Pathology*. The document does not concretely define technologies, but it states that research and using emerging technologies to improve quality of services are in the SLP scope of practice (ASHA, 2016). Examples of technology in the domain of SLP include, but are not limited to, augmentative and alternative communication (AAC) devices, endoscopy and fiber-optic evaluation of swallowing, and ultrasound and other biofeedback systems (ASHA, 2016). The open-ended definition of the category invites additions and subtractions as clinicians follow best-practice methods and evidence. The examples reveal that SLPs may use more diagnostic technologies (fiber-optic evaluation of swallowing) than occupational therapists. However, they are similar in their use of occupation-enabling devices (AAC technologies) and rehabilitation technologies (e.g., ultrasound and biofeedback) (ASHA, 2016, p. 13).

The rule of exhaustiveness specifically related to AT in the OTPF-3 is violated (Nelson, 2006). As demonstrated, occupation-enabling AT and rehabilitation technologies used with active client "doing" are not classifiable in the OTPF-3. Is this oversight relevant to the field of occupational therapy? The author concludes that it is, for two reasons. First, the profession uses the OTPF-3 as a baseline for occupational therapy practice, education, and research (Asano, Preissner, Duffy, Meixell, & Finlayson, 2015; Matthews, Mulry, & Richard, 2017; Nelson, 2006). Second, the growing field of health technology and the use of technology in everyday ADLs supports the permanence of technology as an active part of health care and occupation (Smith, 2017). In addition, the role of technology in occupational therapy is expected to continue and compound.

This article proposes that updating the OTPF to define clearly the role of AT will provide additional guidance and clarification to inform future practice. A clear definition of AT in the domain and process of occupational therapy will protect continued use of technology as related to occupational performance. As the profession evolves, it is important to continue advocating for the role of occupational therapy to ensure that our unique value is recognized. Current literature relating to occupations and technology reveal blurred professional lines. For example, Goh, Loi, Westphal, and Lautenschlager (2017) studied meaningful activity through the use of touch screen technology for people with dementia from the field of psychiatry. In the field of kinesiology, Ross et al. (2017) researched play behaviors using modified ride-on cars. Improving the integration of technology in the OTPF will guide future occupational therapy research and practice.

Clearly defining AT is necessary to uphold the profession's code of ethics, which dictate a responsibility to care for the people we work with and to protect equal services (AOTA, 2014; AOTA, 2015b; Stover, 2016). Stanley (2015) described how Medicare policy changes have negatively impacted reimbursement for equipment for people with complex disabilities over a 20-year period. Decreased reimbursement and coverage of equipment affects occupational therapy practice, as it limits a clinician's ability to fit clients with appropriate equipment. This leads to poor outcomes in health and wellness. Also, it is important for occupational therapists to understand how AT that aims to support occupational performance may serve as either an enabler or a barrier to occupational performance. A key indicator for success with occupation-enabling equipment is the quality of the match between the equipment and the person, which is affected by the service delivery process (Eggers et al., 2009; Polgar, 2006). AT can act as a barrier in numerous ways. AT does not always function as intended and may require more problem-solving or customization than the client or his or her caregivers can handle (Polgar, 2006). This may result from the complexity of the technology; the constant positioning needs for accurate and consistent access; or unforeseen factors, such as the need for secure internet access where none is available. In some cases, the recommended equipment appears to fit the client's performance needs, but stigma prevents the client from using the AT in daily occupations (Polgar, 2006). Inappropriate AT recommendations have consequences, including waste in the health care system, a direct impact on medical insurance coverage and personal finances, and increased dysfunction or deformity (Polgar, 2006). The absence of clearly defined technology applications in the OTPF-3 may lead occupational therapy practitioners to underestimate their responsibility in this process. This may reduce their capability of recommending appropriate occupation-enabling technology. Prudent consideration of technology in the occupational therapy profession must be employed to ensure these consequences do not constrain occupational therapy practitioners or the clients they serve.

Defining the role of therapeutic technology in occupational therapy practice protects best practice, both for occupation-enabling technology and therapeutic technology. Intentionally incorporating technology into practice improves recovery and supports occupational performance. Incorporating freestanding dynamic arm supports in intervention sessions has shown to increase skill acquisition and transfer in children with neurological deficits (Keller & van Hedel, 2017). AT for at-home use is progressing, with promise to contribute to best practice methods as well. For example, powered arm supports, prevalent in Europe, are emerging onto the U.S. market. Powered arm supports provide consistent and customizable support for upper extremity movement in occupational performance. The powered arm replaces an armrest, and the client uses the powered arm support for upper extremity movement at all times in the power wheelchair. This daily aid shows great promise as a compensatory aid, as well as potential for remediation. Emerging AT requires consideration as the focus for research to support best practice methods. When categorized accurately, AT will support occupational therapy practice. Proenca, Quaresma, and Vieira (2018) found that research regarding the effects of therapeutic technology is growing quickly, with 38 articles included in a systematic review on the effects of gaming on upper extremity rehabilitation published since 2010. Defining technology in the OTPF will encourage the next step toward protecting the role of AT in restoration of function, evaluation of specific approaches, and defining outcomes (Proenca, Quaresma, & Vieira, 2018). Furthermore, doing so will protect the reimbursement for services that use innovative technology, as well as support the reimbursement of occupational therapy services and the AT itself.

Table 1

Current OTPF Language and Proposed Changes

Category	Current definition	Proposed change
Occupations and activities	"To use occupations and activities therapeutically, the practitioner considers activity demands and client factors in relation to the client's therapeutic goals, contexts, and environments." (AOTA, 2014, p. S29).	"To use occupations and activities therapeutically, the practitioner considers activity demands and client factors in relation to the client's therapeutic goals, contexts, and environments. *This may include the trial and matching of appropriate assistive technology (e.g., adaptive equipment, wheelchairs, and Electronic Aids to Daily Living) to support performance in occupations."*
Preparatory methods	"Modalities, devices, and techniques to prepare the client for occupational performance. Often preparatory methods are interventions that are 'done to' the client without the client's active participation." Subcategories include "Splints", "Assistive technology and environmental modifications", and "Wheeled mobility" (AOTA, 2014, p. S29).	"Modalities, devices, and techniques used to prepare the client for occupational performance. *Often, these are 'done to' the client and directly address body functions, such as pain, edema, or joint mobility that interferes with occupational performance*." "*e.g., Splinting, Physical Agent Modalities, and Positioning devices.*"
Preparatory tasks	"Tasks involve active participation of the client and sometimes comprise engagements that use various materials to simulate activities or components of occupations" (AOTA, 2014, p. S30).	"Tasks involve active participation of the client and sometimes comprise engagements that use various materials**,** *including technology*, to simulate activities or components of occupations."

A review of AT in the OTPF-3 indicates that changes are required to improve the document's clarity and usability as a reference. As stated, AT complements the category "Types of Occupational Therapy Interventions" (AOTA, 2014, p. S29). Occupation-enabling technology directly supports occupational performance. Therefore, this concept should be included under the intervention category "Occupations and activities." This author proposes updating the description as follows:

> To use occupations and activities therapeutically, the practitioner considers activity demands and client factors in relation to the client's therapeutic goals, contexts, and environments. *This may include the trial and matching of appropriate assistive technology (e.g., adaptive equipment, wheelchairs, and Electronic Aids to Daily Living) to support performance in occupations."* (see Table 1)

This definition aligns with theoretical models that emphasize the importance of matching AT with the individual user's goals, context, and environment. It allows for the categorization of developing AT, such as movement sensors, which are installed in an environment to monitor in-home mobility, or low vision apps that guide topographical orientation in the community. It clarifies the active manner in which AT supports occupational performance. This will validate the impact that tools, such as reachers, dressing sticks, specialized computer mice, keyboards, and customized power chairs have on occupational performance.

The use of rehabilitation technologies may require active or passive participation. To maintain the integrity of the "Preparatory methods" category, modalities that are "applied to" the client to prepare for occupational performance should remain the focal point. This includes positioning devices that prevent loss of range and orthopedic changes, and techniques that reduce pain and edema. Examples should include both non-technology and technological options. The process of splinting and fitting a positioning device does not regularly use technology. Electrotherapeutic physical agent modalities target the same goals but with technology assist (AOTA, 2008; Walter & Winston, 2014). A more accurate description of "Preparatory methods" could read, "Modalities, devices, and techniques used to prepare the client for occupational performance. *Often, these are 'done to' the client and directly address body functions such as pain, edema, or joint mobility that interferes with occupational performance.*" Subcategories include: "*Splinting, Physical Agent Modalities, and Positioning devices*." This revision would maintain the integrity of the current category while providing examples that are more illustrative of current techniques therapists actually "do to" a person.

In practice, some consider rehabilitation technologies that are used actively in clinical settings "the future in the field of rehabilitation" (Proenca et al., 2018, p. 99). The "Preparatory tasks" intervention type consists of tasks that address specific body functions and performance skills, such as therapeutic exercise (AOTA, 2014; Walter & Winston, 2014). Examples of therapeutic technology used in the preparatory task intervention type include virtual reality, computer games, tablet apps, robot-assisted therapy devices, and interactive light boards. The proposed language change is as follows: "Tasks involve active participation of the client and sometimes comprise engagements that use various materials, *including technology*, to simulate activities or components of occupations." These changes are not extensive; however, they do reflect the various manners in which technology is used in practice. The diffusion of technology across the categories of "Occupations and Activities" and "Preparatory methods and tasks" represent the current conditions in occupational therapy practice today.

Clarifying AT in the OTPF aligns with occupational therapy's code of ethics (AOTA, 2015b) and establishes the basis for occupational therapy services using technology to fulfill *Vision 2025* (Sparacio et al., 2017). In the 2013 Eleanor Clarke Slagle Lecture, Dr. Glen Gillen made the following plea to occupational therapists: "We need to move away from therapists 'doing to' and back to a model of 'client's doing'" (p. 649). Smith (2017) proposed that technology and occupation cannot be separated, stating, "What defines us is the unifying concept of occupation: how people occupy their time and space" (p. 8). AT is integral to occupational therapy practice and the people that we serve. Including a firm definition of technology in core documents, such as the OTPF, will provide the guidance and clarification needed to inform future occupational therapy practice.

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many diagnoses. Since 2009, Cara has specialized in assistive technology, ultimately leading a team of clinicians dedicated to wheelchair seating and custom positioning, augmentative communication, and computer access and electronic aids to daily living. Cara is dedicated to continuing educating. She holds the Assistive Technology Professional credentials and has received a postprofessional master of science in occupational therapy. Cara is currently pursuing a PhD in Interdisciplinary Health Sciences. She is a member of the Clinican Task Force, a team of clinicians advocating for complex rehab technology service provision.

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