CHAPTER 4

Assistive Technology (Re)Defined

How does technology—specifically, assistive technology—fit into contemporary educational practice? Assistive technology is a concept defined by federal law in the United States, and it's discussed at every IEP meeting. As the very nature of public education undergoes change as outlined in the previous chapters of this book, so, too, must practices in assistive technology. Before we can discuss what those changes might be, a common definition needs to be established.

In this chapter, you'll:

- Examine the definition of *assistive technology* and the implications of its interpretation.
- Explore who is qualified to provide assistive technology devices and services.

What the Heck Is Assistive Technology Anyway?

In the United States, Public Law 108-446 (a federal law), the Individuals with Disabilities Education Improvement Act of 2004, defines the term *assistive technology* in relation to public schools. The term is broken down into two integral parts: the first is *assistive technology device* and the second is *assistive technology service*.

According to this law, *assistive technology device* means "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability." It excludes devices that are surgically implanted.

Also, according to this law, *assistive technology service* is defined as "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device." The term includes the following:

a. "the evaluation of the needs of such child, including a functional evaluation of the child in the child's customary environment;

b. "purchasing, leasing, or otherwise providing for the acquisition of assistive technology devices by such child;

c. "selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing assistive technology devices;

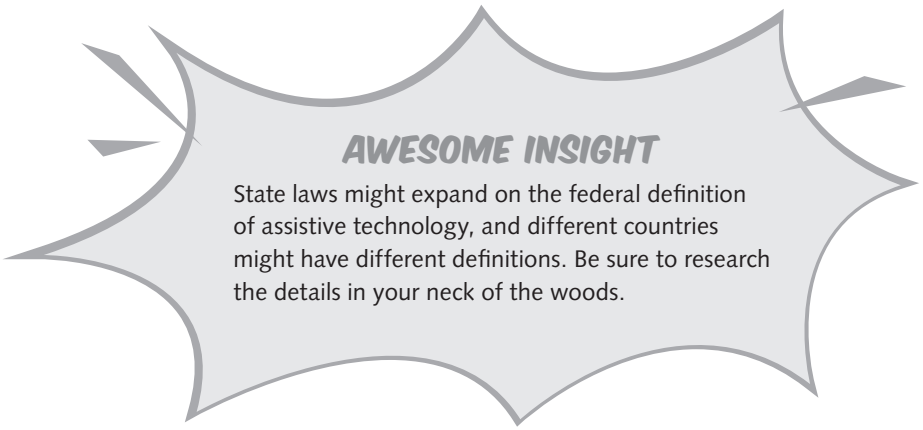
d. "coordinating and using other therapies, interventions, or services with assistive technology devices, such as those associated with existing education and rehabilitation plans and programs;

e. "training or technical assistance for such child, or, where appropriate, the family of such child; and

f. "training or technical assistance for professionals (including individuals providing education and rehabilitation services), employers, or other individuals who provide services to, employ, or are otherwise substantially involved in the major life functions of such child."

Federal law provides a backbone that holds up the rest of the skeleton. When establishing your policies, procedures, and practices, refer to this law for support.

According to the federal definition, if a piece of technology is used by a student with a disability, regardless of need, it is considered assistive technology. An IEP team is charged with the task of defining what a student needs to guarantee a free appropriate public education, including assistive technology (devices and services). The IEP team decides, outlines, and documents what the student requires. If a piece of technology is one of the student's requirements, then the IEP team should document this need in the IEP. Documenting it in the IEP, however, is not what makes it assistive. According to the federal definition, the fact that the student uses the device makes it assistive technology.



The Assistive Technology Act of 1998

The Technology-Related Assistance for Individuals with Disabilities Act was first passed in 1988 (Public Law 100-407). It was reauthorized in 1994 (Public Law 103-218) and again in 1998 (Public Law 105-394), when it was retitled the Assistive Technology Act. The purpose of the law was to increase the access to and availability of technology used by people with disabilities. The act allowed for the provision of federal funds to states to create technology assistance programs. Every state and territory of the United States created and continues to maintain statewide programs, which have the potential to provide valuable support to educational agencies and school districts. The people employed through the Assistive Technology Act can also be valuable allies in the effort to build capacity within an institution.

Beyond the Assistive Technology Act of 1998, other legislation calls attention to accessibility. This includes Section 504 of the Rehabilitation Act of 1973 (Public Law 93-112), the Americans with Disabilities Act of 1990 (Public Law 101-336), Section 508 of the Rehabilitation Act Amendments of 1998 (29 USC 794d), the Individuals with Disabilities Education Act (Public Law 101-476), the No Child Left Behind Act of 2001 (Public Law 107-110), and the Assistive Technology Act of 2004 (Public Law 108-364).

These laws help establish and maintain the necessity of access to technology for learners with disabilities.

Any Item and Any Service

A common element in both parts of the definition of assistive technology is the very first word, *any*: "any item" or "any service." This word encompasses a universe of options because it literally means "without limitations." Imagination is the only boundary when it comes to brainstorming potential solutions. Indeed, anything can be assistive technology depending on how it is used. And anyone who helps a person select, obtain, and then use that item is providing an assistive technology service.

Every Discussion About a Tool

If an assistive technology service is defined as "any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device" and an assistive technology device is "any item…that is used to increase, maintain, or improve functional capabilities of a child with a disability," then *any* discussion pertaining to the implementation of *any* feature or *any* function of *any* tool used by *any*one with *any* disability is an assistive technology service.

The Definition of *Assistive Technology Device*

The federal definition of an assistive technology device causes a conundrum: What is the difference between educational/instructional technology and assistive technology? What makes something shift from everyday technology to assistive technology? Isn't all technology, by definition, meant to be assistive?

The Confusing Use of *Used*

The verb *used* is a point of confusion surrounding the federal definition of an assistive technology device ("any item…that is *used* to increase, maintain, or improve functional capabilities of a child with a disability"). Consider the word *used* in relation to the following example juxtaposing two fictional learners: one with a disability and one without. The federal definition does not make any presumptions about the type of tool used or the task the tool is helping the user achieve. For this example, let's consider text-to-speech as the function of the tool.

Learner one: a person with a disability *used* the text-to-speech function of a device to listen to text being read aloud. Here, we call the device and its text-to-speech functionality *assistive technology* because the person using it has been identified as a person with a disability.

Learner two: an individual without an identified disability *used* the text-to-speech function of a device to listen to text being read aloud. Although the device is assisting this person, because this person does not have an identified disability, the device is not considered assistive technology. We call the device and its text-to-speech functionality *technology*.

The only difference between these two people, who both used the exact same device in the same way and for identical purposes, is that the person with the disability might require the device to complete the task and the individual without the disability might not. *Need* may be the only difference. However, the words *needed*, *required*, or *necessitated* do not appear anywhere in the federal definition of an assistive technology device. The only verb is *used*.

The Definition of *Discrimination*

Does the use of the word *discriminatory* to describe the definition of assistive technology sound harsh? If so, here's a portion of the definition as defined by Dictionary.com: "discrimination (noun): treatment or consideration of, or making a distinction in favor of or against, a person or thing based on the group, class, or category to which that person or thing belongs rather than on individual merit." If the only difference between two people is the disability, then isn't that making a distinction between two people based on the group or category to which one of those individuals belongs?

Of course, it is not the intent of the definition to be discriminatory; the intention is to ensure that people with disabilities are provided equal access to a free appropriate public education. Regardless of the intent, the definition might send the subtle, unintended message that technology used by people with disabilities is somehow different than technology used by people without disabilities.

The Definition of *Assistive Technology Device* Re-Envisioned

What can we do to fix the potential discrimination problem with the definition of an assistive technology device? Although there may be more solutions, here are two options that might help solve the conundrum.

A Practical Option

The first option might be to simply advocate for a wording change in the federal definition by swapping the word *used* for *needs*, or *requires*. The definition of *assistive technology device* could read "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is *required* to increase, maintain, or improve the functional capabilities of children with disabilities." Using this definition, any item used by a learner, whether they have a disability or not, would just be considered technology. This would represent a more accurate distinction between what makes a piece of equipment technology versus considering it assistive technology.

A Visionary Option

Could we envision a world where everyone has access to whatever they need to achieve their individual educational goals regardless of ability or disability? Could we envision a possible future where disability itself wasn't something considered separately?

Imagine a future so inclusive that laws governing disability aren't needed, because the very notion of disability doesn't exist. Everyone living in this society might see people as bodies of potential energy capable of achieving anything if only given access to the appropriate tools. Could we imagine a society so inclusive that the adjective *assistive* is no longer required as a distinction and is therefore abandoned?

In this culture, everything and anything a person uses in the process of learning, whether that person has a disability or not, would just be called *technology*. Technology used by anyone empowers every individual to achieve their potential (see Figure 4.1).

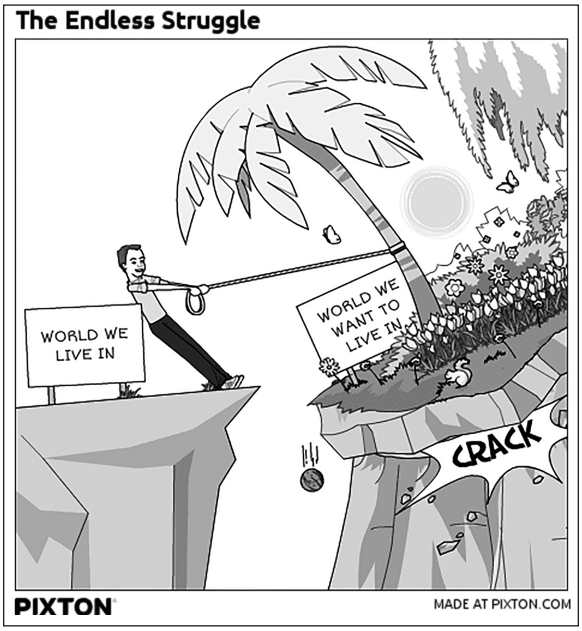


Figure 4.1. The endless struggle between accepting where we are and reaching for where we want to be (created using pixton.com).

Noun, Not Adjective

What benefit does it serve to add the qualifier *assistive technology* as an adjective to describe nouns such as *support*, *tool*, *initiative*, *product*, or *team*? Using the qualifier of *assistive technology* before these nouns implies that there is a difference between that item with and without the qualifier. For example, saying "we provide assistive technology supports" implies that there are supports that are not assistive technology. It may be true that there are two types of supports—assistive technology supports and non-assistive technology supports—but what purpose does that serve? Does using the term as an adjective to describe the function clarify that it is exclusively meant to be for people with disabilities? If a goal of special education is to

create a more inclusive society where people with disabilities aren't viewed separately, does the use of the term *assistive technology* to qualify nouns help or hinder the cause?

What unintended message is sent when you call something a *support* versus an *assistive technology support*? What benefit is there to calling something an *assistive technology tool* as opposed to just calling it a *tool*? What connotation is implied when you call the initiative you are building an *assistive technology initiative*? Consider carefully how to use the term and, whenever possible, use it only as a noun.

Funding Foundation

Although it might be idealistic to wish to abolish the term *assistive* from our collective lexicon as an adjective before *technology*, it is highly improbable that this will occur anytime soon. Current funding schemes provide financial support for minority groups, including people with disabilities. Funding based on the distinction and qualification of a person having a disability attempts to ensure equal access for people with disabilities, marching society onward toward inclusive practices for all.

Is Assistive Technology a Field of Practice?

Universal Design for Learning (UDL) is a framework for instructional design. It is woven into the very fabric of what it means to be an inclusive educator. However, UDL is not its own field of practice.

Positions exist in which educators trained in UDL might serve as coaches to other educators, but these positions should not require a certification in UDL. Any educator who has demonstrated the ability to design and deliver UDL experiences should qualify. Although individual certifications for UDL are being developed by the Center for Applied Special Technology (CAST), this certification is not necessary to implement UDL principles; it is meant to be a credential an educator can add to their résumé. More importantly, CAST is planning to offer institution-level credentialing so individual schools and entire school districts can be accredited as schools that embrace and utilize the principles of UDL in their everyday practice.

I would argue that selecting, acquiring, and implementing technology to support a learner doesn't need to be a separate field of practice. And if that were the case, then assistive technology itself should not be considered a separate field of practice. Helping to make decisions regarding technology is just a part of what it means to be a contemporary educational experience designer. Individuals simply have varying degrees of experience working with different technologies.

Exterminator Experience

If you wage war on some ants that have invaded your kitchen and succeed in expunging them from your domicile, does that make you an exterminator? Most would argue that pest removal is a profession, and just because you killed a few ants doesn't make you some sort of expert in killing ants. However, what if a few months later, you find an infestation of mice that you help relocate? Then, a week after that, you help your neighbor spray some chemicals around the outside of his house to keep spiders out? A bit later, as tales of your exploits spread, friends and acquaintances start writing to you with questions about how to get rid of their own critters. Before long, you're doing research and learning more details about creepy-crawly control than you ever thought you ever would!

You, on purpose or accidentally, have learned a new skill. In fact, you've become such an expert that when your least-favorite neighbor (the one who lets her dog bark into the wee hours of the night) tells you about how she hired a licensed exterminator who charged both her left arm and her right leg for his services, you tell her that you would have helped in exchange for one night of her bringing her dog in. Further, when she shows you the bill and it lists the chemical used to get rid of the termites, you instantly recognize that you would have chosen a less toxic yet equally effective pesticide.

At what point along the path of learning does one move from novice to amateur to expert in any given field? What distinguishes you, a person with lots of experience in extermination, from a professional whose job is extermination? Is it the exchange of money for services? Is it the requirement for certification or a license from some public or private entity? If a person paid to take the examination to obtain certification and then paid even more to obtain a license, does that mean this person is now knowledgeable in all things related to extermination?

Could someone who has not pursued certification and licensure still know as much or something different about extermination? With so much knowledge and research available to the public, are licensure and certification the only things that differentiate someone with formal training and those with an "I can learn how to do it myself" attitude? Do these questions extend to other professions as well, such as plumbing, car repair, or styling hair (see Figure 4.2)?

Figure 4.2. Who is qualified to use a fire extinguisher? (Created using the now-defunct website toondoo.com.)

If You Give a Speech Therapist a Communication Device…

If you give a speech therapist a communication device (along with some advice on how to use it), they'll want to start using the device with a learner with a language impairment. And because occupational therapists know about language development, they'll want to show the occupational therapist too.

The occupational therapist will ask about placement. When you talk about placement, the OT might suggest a keyguard—the keyguard will help the learner target and press the buttons.

When the learner starts using the device, they'll want to use it everywhere. They'll want to use it when they are in their stander; and when they are in their stander, their physical therapist might see them using it. The physical therapist might want to use it too, but will probably need some help learning how.

When the physical therapist asks for help, the speech therapist will give some advice; and the two will probably meet for training. When the training is over, the physical therapist will probably want the speech therapist to do a workshop for all the other physical therapists. The speech therapist will likely say yes and plan a training, and you'll probably want to attend.

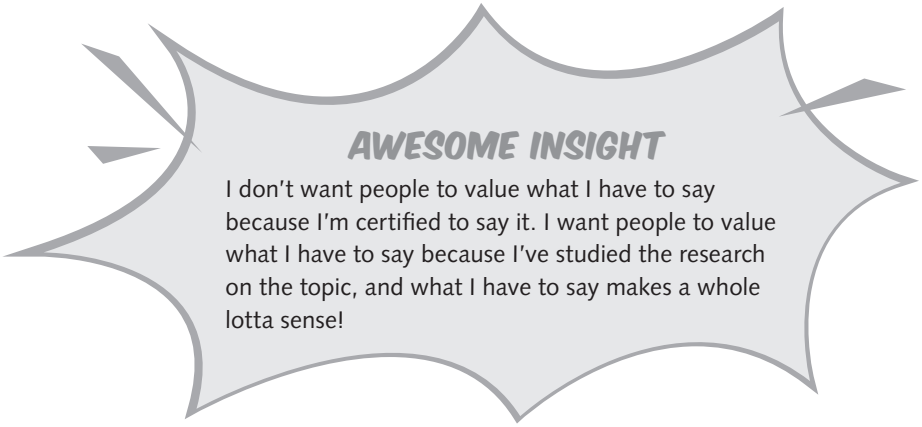
When you go to the training, you'll bring your video camera. You'll record the session and put it online. When the speech therapist sees the video, they'll like it and want you to record more. Then they'll share all the videos on social media. When people watch them, they'll share them too!

Some of the people who see the videos will be other educators, and they'll know learners with language impairments. If they are working with these learners, they'll want to give them a communication device.

In this example, consider the following:

- Who suggested the keyguard?
- How did the learner get the stander?
- Who gave the speech therapist the device to be put in place? What could this person's role have been?
- Could the speech therapist have been the one to procure the device in the first place? If not for this learner, what about the next?
- The speech therapist certainly seemed qualified to implement the device. What if the learner needed another piece of equipment not mentioned in the story?

The communication device, the keyguard, and the stander are all assistive technologies, yet in most cases, the people making suggestions and then determinations for the implementation of a particular device do not have "assistive technology" in their job title. Instead, they hold certifications in their own respective fields of practice, and they infuse technology based on those credentials. You do not need to have the words "assistive technology" in your job title to suggest or implement assistive technology.



Anyone and Everyone

Knowledge of and experience with technology, assistive or otherwise, is a spectrum. Everyone has some knowledge about technology that could be used to help individuals learn, including the learners themselves! Professionals grow their knowledge base with each situation they work through.

A person's knowledge and skill level about different functions or aspects of technology can be represented on a spider or radar chart. This type of chart is a graphical method of displaying quantitative variables. Professionals (and students) can chart how comfortable they are with any number of different technologies, illustrating their strengths and where they need to learn more.

For example, a professional might have years of experience supporting learners who use an augmentative/alternative communication (AAC) device to learn language but have very little experience working with tools related to literacy and reading. Another professional might have loads of experience with literacy and reading

supports but have virtually no experience with AAC devices. *Both*, however, have experience using technology to help individuals with disabilities. *Both* know assistive technology. The only difference is in what they know.

Anyone and everyone (parents, learners, and educators) can rank their abilities on a spider or radar chart because anyone and everyone has some knowledge about what might help an individual achieve their educational goals (see Figures 4.3 through 4.6).

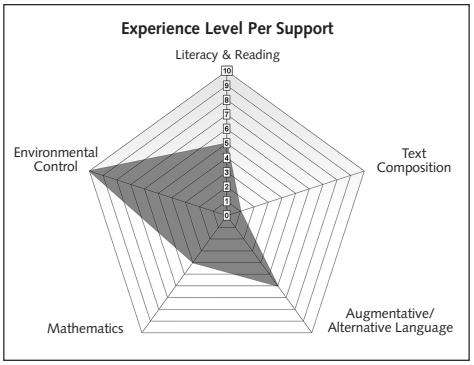


Figure 4.3. An individual with the most experience in working with environmental-control supports.

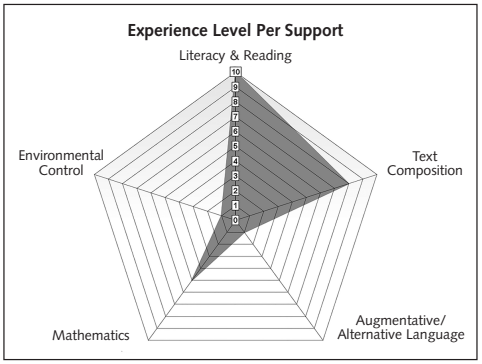


Figure 4.4. An individual with the most experience working with literacy and reading supports.

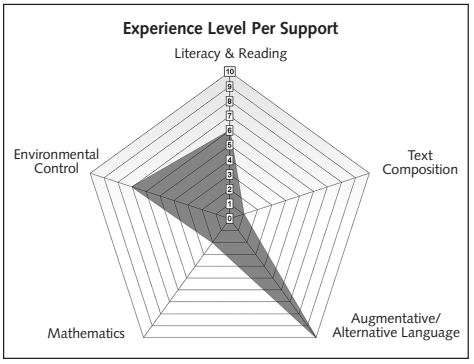


Figure 4.5. An individual with the most experience in working with augmentative/ alternative language supports.

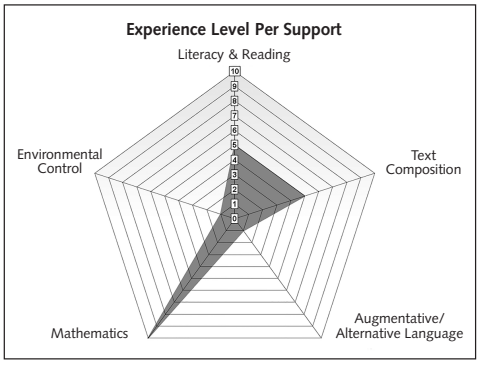


Figure 4.6. An individual with the most experiences in working with mathematical supports.