Coming Forward to Learn

Compensatory Approaches and Remedial Instruction Integration for Adults with Dyslexia

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Abstract

Adults with learning disabilities have struggles that manifest in a lack of motivation to learn. One way of understanding the learning challenges of adults is by considering their learning experiences or situations. This paper explores assistive technology (AT) considerations for adult dyslexics struggling with learning an essential knowledge in an adult learning and job preparation program for a local urban community in Texas. At the same time, there are compensatory approaches and remediation instructions that should be critically considered for AT implementation in job training. As in most instructional efforts, the intent is to "build up" a skill with which an individual is struggling. Assistive technology is merely a tool used to accomplish a task without full reliance on the technology. The emphasis, therefore, is not on the technology itself, but on what the technology can do for adults with dyslexia.

Keywords: Assistive technology, adult dyslexia, job training for adult dyslexics, disability barrier

Introduction

With the range of currently available technological tools, it is important for people to maintain a healthy relationship with technology to lessen stress and create a balance in their lives (Cummins, 2000; Francke, 2017; Johnson & Johnson, 2008; Parette & Scherer, 2004). With such a relationship, people can meticulously choose suitable tools they will be

able to handle, mostly for enhancing their learning experiences (Beard, Harper & Riley, 2004; Li, 2014; Raskind, 2013). What if one is struggling with learning? The answer to this question lies in the integration of assistive technology (AT) and instructional strategies that could play a huge role for students with disabilities.

Raskind (2000) defined AT as, "any item, piece of equipment or system that helps people bypass, work around, or compensate for learning difficulties" (p. 4). Often considered as low-tech or "fancy," AT is still one of the underlying strategies schools use to help with learning issues (Edyburn, 2006; Morin, 2015a; Raskind, 2000). A few examples of AT that are relatively low-tech are canes, wheelchairs, and eyeglasses, but there are newer technologies like computer-screen enlargers, text-to-speech readers, alternative keyboards, calculators, spellcheckers, and electronic mobility switches, just to name a few (Raskind, 2000; Rose, Hasselbring, Stahl, & Zabala, 2005).

Why is there an overwhelming interest in AT? The interest in devices and services might have to do with legal mandates such as the Americans with Disabilities Act (1990) and the Individuals with Disabilities Act (2004). Lee and Templeton (2008) presupposed that the consideration of optimizing the use of technology is "a mandated practice within the field of education, and once education professionals identify the need, AT should be considered as an option for individual learners with disabilities" (p. 213). However, educators are tasked to fulfill the intent of the laws. This means that collaboration among education stakeholders, specifically in considering or planning an educational program, is key to continuing support (Benton-Borghi, 2013; Edyburn, 2002a; Edyburn, 2002c; Edyburn, 2005; Lee & Templeton, 2008).

Most of the time, when a student is struggling in performing a task, the tendency is to remediate: re-teach the skill, break down the steps, use alternative strategies (from written to visual), reduce the work, conduct one-on-one tutoring, or even give additional packets for practice (believing that more work produces mastery). If this were the case, Edyburn (2002c) would not have argued that remediation will not teach individuals to work independently. AT can offer solutions while targeting the limitations of the individual learner. Such an approach is considered compensatory (Osewalt, 2015)—building on the strengths of a student while working around his or her weaknesses. Compensatory approaches could be utilized when a characteristic of a disability is recognized and a decision has been made that AT is appropriate for learning an essential knowledge (Edyburn, 2002c; Edyburn, 2005). For instance, a spellchecker can be used to type correctly spelled keywords into a search engine. In other words, the context should dictate the use

of a spellchecker rather than affording general access to the technology (Edyburn, 2002a; Edyburn, 2002b; Rose et al., 2005). With this AT, the student can independently look up information online. Martin (2015) also suggested that individuals and instructors explore tools, such as desktop software, web-based tools, Chrome applications (or apps) and extensions, and apps for the iOS (operating system for mobile phones manufactured by Apple), and Android mobile phones. These are tools that can be integrated within instruction.

Most adults with dyslexia tend to exhibit inconsistent behaviors, depending on certain situations that may even influence career decisions (LoGiudice, 2008). These behaviors are manifested from difficulty in general reading and writing skills; time management skills, especially in wrong estimation of time; difficulty with numeracy; and difficulty in giving directions. How exactly does AT help adult students with dyslexia? Specifically, AT helps adult students with dyslexia develop their independent thinking, improve communication, maintain learning and self-reliance, develop problem-solving skills, and become heavily involved in their own educational activities (Akpan & Beard, 2013; Lee & Templeton, 2008). Modern technologies can assist individuals with dyslexia with their learning experiences, but technology cannot always replace direct intervention (Ryan, 2015). Nevertheless, technological innovation geared towards learning assistance can still accommodate challenges and increase the self-confidence of individuals with learning disabilities, not only in the classroom, but also at home and on the job.

Characterizing Adult Dyslexics

In this article, an adult is defined within the psychological context of someone who is self-sufficient, responsible for his or her own decisions, and is at least 18-years-old (Mintz, 2015). In my capacity as an instructor for an adult learning and job preparation program for an urban community in Texas, I have taught adult students from different walks of life—mostly from the lower socioeconomic strata and from various ethnic backgrounds. Some were English language learners, some were displaced individuals (e.g., recently divorced), and even some individuals were recently released from incarceration. These were individuals who enrolled in computer classes, wanted to enhance their skills, and wanted to land a decent job. These were individuals who wanted a second chance. However, in the course of my four years as the instructor, I encountered numerous individuals enrolled in my class who struggled with acquiring computer skills and lacked skills in reading, writing, and numeracy. At the same time, most of my adult students juggled

different life roles and considered learning another skill challenging. As Ross-Gordon (2011) claimed, adult students are characterized as jugglers of life roles: employee or employer, student scholar, spouse or partner, parent, caregiver, and community member. These numerous roles could limit adult students' allocation of time for academic study (Ross-Gordon, 2011). My adult students with dyslexia are challenged at a higher level in fulfilling their numerous roles.

Further, McLoughlin and Leather (2013) explained that adulthood is the longest stage of human development, and there is a huge difference between the challenges faced by someone who is 18 years old and someone who is 45 years old. Learning difficulties should, therefore, be addressed in context, especially in light of the basic cognitive processes (McLoughlin & Leather, 2013). Just because an adult is considered a "grown up" does not mean that they are not undergoing stages of development in an adult life. By failing to recognize specific interventions or accommodations for adults with dyslexia, we are failing to meet their literacy needs (McLoughlin & Leather, 2013).

Lapkin (2015) claimed that the best way to understand dyslexia is to first ascertain what it is not—it is not a sign of laziness and is not poor vision. Rather, dyslexia is a condition in the brain that affects the way written and spoken language is processed (Lapkin, 2015; McLoughlin & Leather, 2013; Schultz, 2011). Individuals with dyslexia can understand complex ideas, but they just need more time to process information. However, McLoughlin and Leather (2013) posited that dyslexia, in general, is still an evolving concept and has come to mean much more than a reading problem to such groups and practitioners. Although there is now a better understanding of dyslexia at a cognitive level, the broad implication is that both reading and spelling are skill deficits that could occur for many reasons, including a lack of education (McLoughlin & Leather, 2013). In other words, it is not merely asking: Why do some people find it difficult to read, write, and spell? Why do some people struggle with spelling when they can learn to read? Why do some people find it difficult to recall what they read? Nosek (1997) posited that, in many ways, dyslexia could be unexpected. The person who is having a difficult time could be applying the right sounds to letters, reading sentences, and in fact, could be talented in many areas. It might be hard for others to understand how a talented artist could have difficulties learning to read. Nosek (1997) explained that the same talent that provided individuals with dyslexia with abstract and conceptual skills in some areas might also be intensifying their own perceptions of how different they are from their peers. However, to really understand the complexities of an individual mind, it is only apt that the right ques-

tions be asked to evaluate someone's learning difficulty (Haven, 2015; McLoughlin & Leather, 2013).

Adults with dyslexia are also conditioned to avoid situations that are problematic all together (LearningRx, 2015; Nosek, 1997). Often, dyslexia in adults could go unnoticed because they want it that way (Nosek, 1997). Nevertheless, cognitive skills trainers at LearningRx (2015), a brain training program, outlined the following symptoms of adult dyslexia: (a) difficulty concentrating, (b) restlessness, (c) poor memory skills, (d) difficulty remembering and understanding what is read, (e) slow reading, and (f) poor time management. Consequently, McLoughlin and Leather (2013) indicated that no two adults would have the same exact symptoms of dyslexia. This is due to the possibility that difficulties in phonological awareness, verbal memory, verbal processing, motor coordination, and mental calculation may co-occur in some individuals and may not all together be visible in others (McLoughlin & Leather, 2013). However, the most significant aspect of assuaging the struggles with adult dyslexia is to pinpoint the deficit skills (LearningRx, 2015; McLoughlin & Leather, 2013).

It is also important to note that dyslexia goes beyond reading and spelling since there are co-occurring difficulties in language, organization, and mathematics (McLoughlin & Leather, 2013). To this, McLoughlin and Leather (2013) stated: "Despite this [co-occurrences] being promoted as a new definition of dyslexia, [it] applies across the board" (p. 3). Other than the learning difficulties, LoGiudice (2008) explained that adults with dyslexia could also exhibit the following irregular behaviors: (1) always short-tempered; (2) very anxious; (3) easily frustrated, angered or annoyed; and (4) are easily stressed because they become immediately overwhelmed in certain situations. If AT is utilized to compensate for specific disability-related limitations, it could reduce stress experienced by adult students who struggle, as well as improve their self-image (Shultz, 2011; Swaim, n.d.).

How Assistive Technology is Determined

The notion of not being in control contributes to a sense of helplessness and reduction of overall self-worth for adult individuals with dyslexia (Hultquist, 2008; Nosek, 1997; Schultz, 2011; Swaim, n.d.). Considering AT is a big leap in improving self-esteem; solutions under consideration for the various scenarios involving adults with dyslexia should be based on their needs rather than on their disability.

Haven (2015) warned that a poor match between technology and user could lead to the abandonment of technology—possibly 80% of AT

is abandoned by a potential user, which could, consequently, lead to no improvement in functional capabilities. This only means that the potential user may not like the technology at all or would prefer something else. The personal preference might have something to do with not wanting to appear different (Haven, 2015). The most imperative facet in this process is to identify the right tool needed to accomplish a certain task. This would involve an in-depth discussion, which basically amounts to asking the right questions about areas in which the student has difficulties. Haven suggested knowing firsthand the cause of the problem and selecting which generic technology feature might be effective in producing the anticipated outcomes. The Interagency Program for Assistive Technology–North Dakota Assistive (2018) echoed this suggestion by stating that selecting the appropriate AT strictly involves following a process that will lead to the "best fit" between a person, environment, and technology. Finding the best fit would certainly minimize bad decisions that would likely waste time, energy, and money.

Swaim (n.d.) explained that there are four questions to ask in formulating AT solutions:

• What task does the student need to do that he or she is unable to do at a level that reflects his or her ability?

• What current accommodations or modifications are being used? What form of AT is available to help one tackle this task? What is the level of success one can expect in using such tools?

• Is the student able to complete the task independently with the current accommodations or strategies? If so, AT is likely not indicated.

• Would the use of AT help the student perform the task more effectively, in the least restrictive environment, or perform successfully with less personal assistance?

Considering these four major areas in which assessments need to be made, it is important to understand the interaction in play. The interaction is between the PERSON, the TASK with which the student is struggling, the ENVIRONMENT in which the task will be performed, and WHO needs to do WHAT and WHERE (Haven, 2015). As for the tools to use, it is important to note that AT tools that support student academic needs can be high-tech or low-tech (Morin, 2015a; Swaim, n.d.). Swaim (n.d.) suggested that it is safer to start with the low-tech AT tools (e.g., colored overlays for reading books and computer screens, highlighting ideas, magnifying text) and then build support as needed, because the goal is to achieve the right balance of support rather than over-accommodate. This right balance will surely enable a student to

complete the task independently with minimal supervision. In fact, Haven (2015) also suggested performing AT trials to test the usefulness of the AT. This testing would also instill confidence in the decisions made, regarding accommodation.

Emphasis on Individual Support

The provision of individualized support for adults with dyslexia should focus on their specific needs for improving a deficit skill to achieve success in job training. In K-12 settings, there is legislation requiring school districts to create specialized academic plans and to adopt the Education for All Handicapped Children Act (Katz, 2015). The educational assessment process in K-12 ties in with the individualized education program, which determines student needs. However, for adult students with dyslexia in non-traditional settings, there is no such formal individualized education program. Instead, participants go through an intake process. My adult students who underwent an intake process prior to attending formal classes were simply asked if they have learning issues. The training classes we offered were geared toward job placement. That was the ultimate goal of the training. As the instructor, it was my job to help my adult students learn the skills they need to be successful in their current or future workplace.

In addition, our intake process also included personal goal setting. Goal setting is more appropriate for adult students because adult learners come with timescales goals (Mitchell, 2017). Their short-term goals may lead to long-term goals. This means that, although they initially sign up, for instance, for basic computer job training, and soon after they achieve the basic skill level, they eventually realize their capability to acquire more advanced skills. Timescales allow adult students to write down their goals for the next five months or so while revisiting each goal each month (Mitchell, 2017). It only makes sense that these goals fit together and relate to their main goal, which is career advancement (a lifetime goal). In fact, adult goal setting can be applied to anything—from career to relationships (Mitchell, 2017).

For instance, in my basic computer training class scenario, participants can learn the skills to navigate online and how to use Microsoft Word program. Their main task is to follow the instructions for each lesson in the module. Yet, to follow the instructions, they must be able to read the instructions for a hands-on activity and/or mimic the instructors' actions projected on the computer screen. For adults with dyslexia, it is sometimes difficult to follow through with each activity because there is so much to read and follow. Some adults have taught themselves to

read, while others barely look at the screen to even attempt to read. My adult students usually take their cue to start typing by telling them exactly what to type (even exactly how to spell). In other words, if I were to give them a sheet of paper and then tell them that they should follow the steps, adults with dyslexia would not know how to begin. Each step must be broken down and explained while working on the task. The documents given to adults with dyslexia should only contain instructions necessary for the exercise at hand, devoid of excessive and needless details (Imrie, 2013). This is to guarantee that the document containing instructions has a straightforward structure and details that are not distracting.

The support given to each adult with dyslexia may need to be tailored since the symptoms of dyslexia may vary from case to case (LearningRx, 2015; McLoughlin & Leather, 2013; Nosek, 1997). Nevertheless, Morin (2015b) urged instructors to consider the following checklist when searching for the right AT:

- Does the tool address specific needs and challenges?

- Will it build on an individual's strengths?

- Is there a simpler tool that might work as effectively?

- Is the student willing and able to use the tool?

- Will the tool work on a mobile device or a computer being used by the individual?

- Is there available technical support?

Taking all of this into consideration should enable the instructor to make an informed decision about the right AT tool. All in all, the different assessment processes should result in different AT recommendations that could match the support needed for each individual (Watts, O'Brian, & Wojcik, 2004).

Compensatory Approach
Versus Remedial Instruction for Adults with Dyslexia

When an adult student with dyslexia encounters a challenge inside the classroom that renders him or her incapable of finishing the task required by the instructor, the student is left feeling frustrated. The instructor, then, is challenged to find solutions that will allow the student to learn the content and master the skills. The question is: How should the instructor intervene?

Edyburn (2002c/2006) theorized that there are two AT considerations:

remedial approaches (in the form of differentiated instruction; e.g., additional instructional time), and compensatory approaches (when remediation efforts have failed). Osewalt (2015) added that compensatory approaches can enable individuals to reach their full potential while working around an individual's limitations. Therefore, when little progress ensues from remediation, it is time to switch to compensatory approaches.

Swaim (n.d.) explained that AT is a compensatory approach to improve student capabilities and an attempt to bypass a deficit. For instance, in my adult basic computer class, if a student with dyslexia were having trouble reading the instructions of a lesson on searching for information online, a compensatory approach would be to provide a device, like an iPad with a recorder app, that would read the instructions aloud. With this assistance, the student would still be able to access the materials despite having reading difficulty. A remedial strategy for this same situation would be reviewing phonics or chunking words to help the student read the text.

Edyburn (2002c/2006) claimed there is a critical decision to be made in considering AT and used an example of an individual who was unable to complete a certain task because his or her right arm was missing to drive home the magnitude of that critical decision. Edyburn (2006) illustrated,

> Additional therapy may be an option if I am recovering from surgery, but not an option if I've had an amputation . . . the benchmarks to guide decision-making about remediation and compensation are much clearer in situations involving mobility and sensory impairments. Unquestionably, compensatory approaches are often used because there are simply no other ways to complete the task. (p. 22)

Therefore, a way to address the remediation versus compensation approaches is to consider both as complementary instead of in competition, and the perfect way to make this determination is to answer the following question, "What percentage of time and effort should be devoted to remediation and compensation?" (Edyburn, 2006, p. 22). For instance, Edyburn (2006) suggested a tipping scale of 70% AT compensation and 30% remediation. This might essentially work for adults with dyslexia who could benefit more by AT use to work around a lesson. Additionally, Swaim (n.d.) posited that providing AT should not prohibit an adult student from receiving remediation because both approaches are used in conjunction since, evidently, students who use AT solutions frequently improve their skills. Osewalt (2015) also claimed that using compensatory approaches does not call for the cessation of remediation, and the key, at this point, is finding a balance between approaches.

Finding a Balance Between Remediation and Compensation

If an adult with dyslexia is trying to learn how to use a computer while engaging in on-the-job training and needs to read text to do so, AT can be employed to help the student successfully learn the skill. For instance, I asked my students to find five customer service job postings on a job search website. To accommodate my adult learners with dyslexia, a remediation approach would be to cut back on the number of searches from five to three. Since it will take a learner with dyslexia more time to find the postings, cutting back on the number of tasks should enable the learner to complete the task in a reasonable amount of time. Using AT with a compensation approach, the instructor could install an app or a browser extension (e.g., Snap and Read Universal extension for Google Chrome) that could be accessed on the computer's desktop to read a digital copy of the instructions for the classroom activity (YouTube link for instructions on how to add Snap&Read to your Chrome browser can be found on "More to Explore"). The instructor could teach the student how to activate the app so the student could independently work on the task with minimal assistance from the instructor. The app could, in fact, read the text to the student.

Harrison (2012) explained that a remediation approach could allow an individual to complete a task at a faster rate inside the classroom, while a compensatory approach could help an individual work around a deficit skill but still get the task accomplished. This means that a compensatory approach promotes a sense of independence. For instance, if an adult student with dyslexia struggles with reading normal-sized text at 100%, a recommendation would be to activate the magnifier tool to enlarge the text while reading (the magnifier tool is available in Windows). In this case, the student is learning how to use the magnifier tool while focusing the tool on the words, reading the text, and maintaining strict independence in accomplishing the task. In the long run, an assessment of a learner's skill performance would inform the teacher of how to adjust the time and effort allocated for task completion and whether the compensatory approach of using the AT is producing the desired level of success.

Once instructors recognize a learning issue, it is critical that they determine how to respond accordingly. This means that educators should be more committed to finding resources and tools to support successful academic performance (Edyburn, 2006). Consequently, remedial efforts and compensatory approaches should be complementary (Edyburn, 2006; Edyburn, 2005; Harrison, 2012; Osewalt, 2015; Swaim, n.d.).

Outcomes and Benefits

There is another perspective on how AT tools support the learning of adults with dyslexia. AT tools might bridge a gap in skills. Students, however, are not only learning how to use an AT tool, but they are also building their knowledge of technology, in general, which they may be able to apply to other types of technology.

Jerome Bruner's (1966) theory on instruction is about learners constructing concepts or ideas based on a new knowledge or collating past knowledge. This means that when students are learning how to use AT tools, they are going beyond the information given and exploring other tools, too.

The instructor is also engaged in active dialogue with the student, making sure that the information being relayed is in accordance with the student's current understanding (Bruner, 1966). Students are empowered when teachers make content and AT tools available for them so they can have the experiences they need and, thereby, be encouraged to learn more. To make this commitment, we consider Bruner's (1966) theory of instruction that addresses four facets:

- predisposition about learning;

- the way the body of knowledge is constructed so a learner can comprehend the knowledge;

- the most effective way to present the materials, and

- the nature of pacing of rewards and punishments.

While the rewards and punishment may not be structured exactly comprehensibly in an adult class setting, such initiative undertaken by the learner will contribute more towards a personal sense of achievement.

Argument 1: Which approach should be critically considered for AT implementation with adults who have dyslexia?

Swaim (n.d.) claimed that providing AT should not prevent a student from receiving remediation efforts. On the contrary, it is best that both approaches are used since learners who use AT solutions would frequently improve their skills by also receiving remediation (Edyburn, 2006; Edyburn, 2002c; Swaim, n.d.). Osewalt (2015) also claimed that using compensatory approaches does not mean remediation should stop. Harrison (2012) argued that both remediation and compensation are important in maintaining a balance in learning skills. The point of the matter is finding a balance between approaches. Edyburn (2006) affirmed that, to sustain a balance between approaches, the time and effort al-

location could be adjusted over time if the compensatory approach of using AT is producing the desired level of success.

In considering the appropriateness of the compensatory approach of implementing AT, an instructor must be fully cognizant of a student's response history towards previous compensatory approaches. The technology must be adequate to meet the needs of the adult with dyslexia. Even in the planning stage, it is the identification of the student's strengths rather than their weaknesses that is crucial. Students need to feel "accomplished" despite the consistent utilization of AT. Additionally, a limited reading ability does not mean the adult with dyslexia cannot demonstrate fine auditory skills. If an adult with dyslexia can hear well, then the AT chosen for this student should capitalize on this strength. For instance, an instructor might consider a text-to-speech program to allow an adult with dyslexia to listen to instructions instead of reading them on a piece of paper. The student's ease in using the technology and the effectiveness of its use should all be taken into consideration in the decision to keep using the AT. The former criterion mandates that the student be involved in the decision-making process.

Argument 2: What Can Specific AT Do for Adults with Dyslexia in Computer Job Training?

Tools like AT can help learners be more successful in their learning endeavors, whether they are in a formal or informal academic setting, at home, or even at their workplace. The overarching consideration should be what a software program or device can do to help the adult with dyslexia.

Martin (2015) explained that AT could be used with adults with dyslexia, such as: text-to-speech apps, dictation software, and word prediction programs could be used to assist in their learning endeavors. A sample text-to-speech app suitable for an adult with dyslexia is called Snap&Read (compensatory). This is an app that can be installed and accessed on the toolbar of a Chrome browser. If an adult student with dyslexia opens a Microsoft Word document or reads a web page, the student may simply activate the Snap&Read app by clicking on the Chrome toolbar and then use the mouse to click on a word. The program will read the text aloud for the student. The student might even repeat the words after listening to the narration. An instructor may also re-teach a lesson on phonetics (remediation).

Another specific app that could be applicable for an adult with dyslexia is Ghotit (compensatory). It is an online proofreader as well as a word predictor. This is generally helpful for individuals with dyslexia

who have difficulty typing words and misspell words consistently. The best way to explain the assistance provided by Ghotit is to liken it to the auto-suggestions and automatic word correction a smartphone provides in texting a friend. For instance, when an adult with dyslexia is creating a report with a word processor, Ghotit will automatically correct any misspelled words. A text to be processed can also be pared down (remediation). However, Ghotit will allow the student to work at a faster rate without being stressed by the misspelled words and incorrect grammar (compensatory), which are flagged by Microsoft Word with red and green wavy lines, respectively. An instructor can review a lesson on active and passive voice (remediation) because Microsoft Word marks this kind of grammar error and activates proofreading cues. However, MS Word only flags these errors when the settings are set.

Another AT tool that adults with dyslexia could use is the screen-reader (compensatory), which can be activated from the control panel of Microsoft Windows. A screenreader can display content and translate visual information into audio information as the student navigates through the menus, controls, and icons. A one-on-one tutoring (remediation) can be customized to help the student navigate through the controls of a computer. This one-on-one tutoring could be arranged outside class hours or by appointment.

The use of colored overlays (compensatory) for computer screens is an AT tool for adults with dyslexia who are learning how to use computers and a word processing program like Microsoft Word. Wyman (2013) explained that the colored screen overlays help steady the words on a page, which aid individuals with dyslexia in reading and reduce the symptom of visual stress. The overlay is usually held flat against the computer screen by static electricity generated by the monitor. Overlays also come with adhesives to keep them in place and may be cut to fit the monitor screen. While the student types, an instructor can read and spell the text aloud (remediation). This could be quite time-consuming; nevertheless, it might need to be done so the student will not fall behind his or her peers.

Adults with dyslexia enrolled in a basic computer job training should demonstrate technology skills and their understanding of technological concepts. Using AT will give them more confidence in using technology, in general. The learning curve is manageable because technology is available for particular situations. As technology advances, instructors and students alike need to maintain their skills in using technology. The list of AT tools may be exhaustive in the future, but that only means there will be more options from which to choose. There is no limit to what people can do. Instructors need to persist in finding ways to improve learning.

Relevance of Practice and Target Audience

The accommodations that should be offered in the classroom are not only provided on a case-by-case basis, but they are most likely employed informally. If education administrators and policy-makers realize that the needs of adults with dyslexia should be formally documented and accommodations must be integrated into formal instruction, they will, consequently, be compelled to invest in AT. This might even be taken into consideration when applying for a grant. With limited resources, I had to work with whatever is available and free. I even had to solicit help from co-workers as I recorded their voices reading instructions from our training manual so my students can listen to the audio instruction. I did not want my students to give up because it takes a lot of strength to come forward and learn a new skill.

Furthermore, a job training, for instance, in basic computer training should not be limited to simply learning how to use computers, but it should assist students in understanding the concepts and acquiring the skills to use different types of technology. If students can learn how to navigate the different programs in a computer, they can also learn how to use other technology, for example a copier machine that has faxing and printing capabilities. Therefore, if adult students must use AT tools, they would need to learn to use different programs associated with the AT tool and adapt these programs to the task at hand, which are necessary skills for operating various technologies. There is a need to intensify the pressure on nontraditional learning centers to take AT usage seriously. Investment in AT tools must also be carried out.

Conclusion

Ryan (2015) stated, "The number one way to succeed on the job is to use technology." Adult students with learning disabilities, such as dyslexia, whether they are looking for a job or enhancing their skills to get a promotion, want to succeed in their jobs. Pressured by the need to have adequate computer skills to fulfill certain job requirements, adults with dyslexia are very motivated to succeed despite their struggles. Accordingly, AT comes into play as they work towards achieving their long-term goals.

One of the most encompassing issues in accommodating students with special needs is promoting independence in fulfilling the tasks required inside the classroom. Akpan and Beard (2013) promoted the use of AT to reduce potential barriers that may block instruction. Additionally, AT supports teachers in expanding their knowledge of approaches to addressing impairments like dyslexia. The use of AT also reduces the

stress of learning, especially for adult students with dyslexia who come to class already overwhelmed by the challenges in the many roles they play outside the classroom.

AT should be used to provide compensatory support for students with disabilities. However, instructors need to realize that providing AT tools does not mean they will no longer provide remediation. It is best that compensatory approaches and remedial efforts be carried out complementarily, to maintain a balance in learning skills. In addition, it is also important to preserve a balance between compensatory approaches and remedial efforts. Whatever time and effort are allocated to these approaches, the time and effort can always be adjusted based on the level of success yielded by each.

AT must also be adapted to the curricula. Curriculum should be organized in a manner that enables a student to build upon what they have already learned (Bruner, 1966). The curriculum should include opportunities for planning and working towards timescale goals so adults with dyslexia could achieve that personal sense of achievement. This is guidance the case manager also provides when following up with students.

Additionally, there are learner goals, correlated to learner engagement, that need to be achieved. Adults with dyslexia are not simply using AT tools to get any work done. They must construct meaning of what they are learning. Bruner (1966) explained that people learn from their experiences and they develop new concepts based on their past or current knowledge. Experience will lead adults with dyslexia to realize that achieving a task might require a different path. Adult learners must view learning as a personal journey of understanding the concept. It is not merely getting the work done because the instructor "says so." Adults with dyslexia must realize that they have tools they can use to help them learn better and collate what they know with new learning. When they go out into the real world to apply what they have learned in their own workplace, they must select the appropriate tool that will help them accomplish the task at hand. Nobody will be holding their hand each step of the way. They must adapt their learning to different environments. For instance, if Snap&Read and Ghotit helped them with reading and writing while using Microsoft Word, they must learn how to install and activate the application program on their own computers at work and at home. They need to manage their time in creating documents by using the learned AT to be successful in their workplace. In addition to what they already know, they might even discover new AT tools that can enrich their learning experience.

There will be more improved AT tools in the future. By nurturing

adults with dyslexia in the right attitude towards technology and training them in how to use technology adequately for work and personal purposes, instructors will also be guiding them in making their own informed decisions.

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More to Explore

For more information about compensatory tools for adults with dyslexia, please visit the following websites:

Jamie Martin's app guides for dyslexic students: https://www.noodle.com/articles/32-apps-dyslexic-students-will-love-for-everyday-learning

Click on Ghotit's "Try Now" button to sample its spelling, grammar and context checking: http://www.ghotit.com/

How to add Snap&Read to your Chrome browser: https://www.youtube.com/watch?v=xSJltVgoV2E

In lieu of screen overlays that you must purchase, try adjusting your computer display by downloading a software: https://justgetflux.com/

Try Natural Reader that can convert written text to speech: https://www.naturalreaders.com/assets/software.html