4-2015

Assistive Technology for Students with Multiple Disabilities

Emily Allen
St. John Fisher College, eea03307@students.sjfc.edu

How has open access to Fisher Digital Publications benefited you?

Follow this and additional works at: http://fisherpub.sjfc.edu/education_ETD_masters

Part of the Education Commons

Assistive Technology for Students with Multiple Disabilities

Abstract

This research looks into the effectiveness of assistive technology for students with multiple disabilities in a classroom setting. Assistive technology is any item, piece of equipment or product system—whether acquired commercially, modified, or customized—that is used to increase, maintain, or improve functional capabilities of individuals with disabilities. This research also looks into the many obstacles that educators, building support staff and families face when trying to obtain assistive technology devices for their students. This research uses a thirteen question survey, sent out to several educational staff. The results of this research may be used to improve the effectiveness of said devices as well as inform the reader on how assistive technology is properly utilized for students with multiple disabilities.

Document Type
Thesis

Degree Name
MS in Special Education

Department
Education

First Supervisor
Susan Schultz

Subject Categories
Education

Assistive Technology for Students with Multiple Disabilities

By

Emily Allen

Submitted in partial fulfillment of the requirements for the degree
M.S. Special Education

Supervised by

Dr. Susan M. Schultz

School of Education
St. John Fisher College

April 2015

Abstract

This research looks into the effectiveness of assistive technology for students with multiple disabilities in a classroom setting. Assistive technology is any item, piece of equipment or product system—whether acquired commercially, modified, or customized—that is used to increase, maintain, or improve functional capabilities of individuals with disabilities. This research also looks into the many obstacles that educators, building support staff and families face when trying to obtain assistive technology devices for their students. This research uses a thirteen question survey, sent out to several educational staff. The results of this research may be used to improve the effectiveness of said devices as well as inform the reader on how assistive technology is properly utilized for students with multiple disabilities.

Keywords: assistive technology, disability, devices

Assistive Technology for Students with Multiple Disabilities

Students with disabilities may require many different kinds of supports. It is our job as educators and staff to do whatever it takes to find out what works and then appropriately implement and support our students. Assistive technology is a broad term that encompasses several thousands of different devices. When researched and then appropriated implemented, assistive technology has the potential to level the playing field for students with disabilities in a classroom setting. The problem many educators face, is deciding what might work for their students, especially because there are so many different kinds of devices. When it comes to choosing the appropriate assistive technology, it is important to remember that it is not a one size fits all policy. A device that works for one student with muscular dystrophy might not work for another student with muscular dystrophy. The teacher's level of knowledge and support from their schools plays a significant role in whether or not an appropriate device is chosen for an individual student.

In this research study, teacher preparedness, the overall effectiveness of assistive technology, and current obstacles regarding obtaining an appropriate assistive technology device will be discussed. A self-made electronic survey was created and then sent out via email and social media to several different teachers and support staff. It was then asked to be sent out to other educational staff. The intended population to be reached, were those who have students who utilize some form of assistive technology within their classroom.

The results of this study illustrated that assistive technology is effective. It also depicts a strong need for better teacher preparation programs, specifically when it comes to the area of assistive technology. Many educators feel as though they are not prepared to support their student in obtaining an appropriate assistive technology. It was also found that there are a few

obstacles that make obtaining assistive technology somewhat of a challenge. The results also illustrated that teachers as well as support staff are very motivated to learn more about assistive technology and how they can continue to meet their needs of all students in their classroom and school setting.

What is assistive technology?

Assistive technology provides students with disabilities endless opportunities to live a healthier more engaged life (Wise, 2012, p. 170). Meeting the needs of children whose physical impairments affect their learning, is a challenge faced in classrooms across the world. It is how we go about accommodating and modifying the curriculum and learning environment that matters most. According to Wise (2012), disability is defined as "an environmentally contextualized health-related limitation in a child's existing or emergent capacity to perform developmentally appropriate activities and participate, as desired, in society."

With new and ever-changing technologies, it is possible to help students with disabilities in ways never thought possible.   Wise (2012) states that the term "assistive technology device" was originally documented in the United States federal legislation as a part of the Technology-Related Assistance for Individuals with Disabilities Act of 1988. The suggested definition of an assistive technology device was "any item, piece of equipment or product system—whether acquired commercially, modified, or customized—that is used to increase, maintain, or improve functional capabilities of individuals with disabilities" (Wise, 2012, p. 173).

In essence, assistive technology has the potential to be the "great equalizer" for

individuals with disabilities. It can be used to address many of the challenges that

individuals with disabilities face. The ability to access information is essential for

success in education, employment and life. Therefore, much of the development of

assistive technology for individuals with disabilities has focused on providing access.

(Kelly & Smith, 2011, p. 73)

According to (Hemmingsson, Lidstrom, & Nygard, 2009, p. 464), "In School, students with

physical disabilities may benefit from using both low-tech devices, such as writing utilities,

adapted desks, and special chairs, and high-tech devices, such as power mobility devices and

information communication technology".

Studies have shown that roughly half of all children with exceptional health care needs,

require assistive or medical devices, with twelve percent needing communication, mobility, or

hearing devices (Wise, 2012). Wise (2012) also states that in general, the available literature has

concluded that therapeutic as well as assistive technologies are proven to improve the daily

functioning of children with special health needs. It is also stated that this is done by increasing

activity levels and participation in normal activities.

There is a continued need to provide information about the availability of assistive

technology, advances in improving accessibility and functionality of assistive technology,

and appropriate methods to secure and utilize assistive technology in order to maximize

the independence and participation of individuals with disabilities in society. (Netherton

& Deal, 2006, p.10)

Legalities of assistive technology

Fortunately, federal law requires that school systems provide children with disabilities,

with educational and related supportive services that permit them to function as independently as

possible since the 1970's (Wise, 2012). In 2008, the federal government allotted 30 million

dollars to fund research that would increase access to assistive technology devices and services to those with disabilities (Davis, Barnard-Brak, & Arredondo, 2013, p.15). The Individuals with Disabilities Education Act Amendments of 1997 require schools to consider assistive technology for all students with special needs. This was with the hope that it could be used as a "vehicle to continue to access the general education curriculum and FAPE through the least restrictive environment" (Davis et al., 2013, p.15). To support the effectiveness of assistive technology, a survey of people with disabilities was conducted by The National Council on Disability (Berry & Ignash, 2003). The survey found that approximately 75% of school-aged students that were using assistive technology were able to stay in a regular education classroom and roughly 45% were able to decrease the use of school-related services (Berry & Ignash, 2003). In addition to these findings, the survey revealed that approximately 65% of those who responded who were of working age and used some form of assistive technology were able to decrease their dependence on their family members (Berry & Ignash, 2003).

Each child, depending on their physical and or cognitive disability, requires unique assistive technology. It is imperative that educators, parents, and physicians alike focus in on these unique needs, to best accommodate each individual child. It's also important to note that the No Child Left Behind Act of 2001 encourages "progress for students with disabilities in the general education curriculum. AT facilitates this outcome for students with disabilities by providing them with greater access to curricula, instruction, materials, and environments" (Behrmann, Mastropieri & Chung, 2009, p.1).

Drawbacks

There are several setbacks when it comes to assistive technology as a whole, even though assistive technology has proven to maintain and prolong independence in performing functional

tasks (Heller, 2008). For example, "many education professionals simply are not knowledgeable about assistive technology legislation" (Davis, 2013, p.16). Without the proper training on what a child's legal right regarding assistive technology is, education professionals can potentially hinder the implementation of assistive technology devices and proper services. According to Judge (2006), the potential of assistive technology is not being fulfilled and this is because professionals are lacking the appropriate knowledge of what is available and inadequate professional development (p.17). Davis (2013) reports "the implementation of the mandates may vary across public schools. As IDEA amendments continue to enhance AT policies, information regarding how public schools implement such policies is crucial" (p.16). According to Berry & Ignash (2003), the necessary pre-service academic preparation that is needed in order to provide students with the proper services and supports is lacking. The authors go on to state that this preparation includes "acquiring the knowledge and skills needed for evaluation of client needs, making appropriate assistive technology recommendations, and developing advocacy skills such as writing letters of necessity that justify funding for assistive technology devices" (p.6). In addition, Marino, Marino, & Shaw (2006) states "even special educators who strive to stay current in the AT field have difficulty ascertaining current, appropriate information from the diverse resources that are available" (p.19).

Another example assistive technology teams can face, is the sheer number of assistive technology devices that are currently available. In total, there are more than 20,000 assistive technology devices that are available to help students with special needs (Davis, 2013). Although this number is encouraging, it can also be quite overwhelming to assistive technology teams because there are too many options to choose from. Finding something that fits the unique needs of one student, with so many different options available, is a daunting task. If the team is

not properly educated on the child's specific need as well as the actual function the device

supports, choosing the wrong device can be detrimental to the students' progression and

potential.   In addition to choosing the appropriate device, assistive technology teams are faced

with IDEA providing "little guidance regarding this decision-making process" (Davis et al.,

2013, p.16). Adding to the serious and difficult task of providing a child with a fitting assistive

technology device, assistive technology teams are also held legally responsible to implement

suitable assistive technology devices in the midst of unclear expectations. Davis (2013) reports,

"IDEA provides even less guidance to teams that have decided that an AT device is warranted.

At this point, a new decision-making process in which the team selects the specific device must

commence" (p.16). According to (Dyal, Capenter, & Wright, 2009), when assistive technology

is being considered for a child, there must be a precise and thorough assessment to decide

exactly what will be needed (p.558). To support the idea that IDEA policies are unclear

regarding assistive technology, a survey conducted by the National Assistive Technology

Research Institute concluded that policies put in place by the states regarding the "consideration

of assistive technology are inconsistent and lack specificity regarding policy, procedures, and

implementation" (Davis et al., 2013, p.16). Davis (2013) states "the complexity of AT delivery

to students with disabilities is intricate and multi-faceted" (p.16).

The cost of assistive technology is also an obstacle faced by assistive technology teams.

According to Zascavage and Winterman (2009), in the beginning, assistive technology teams

tend to be frightened away from proposing the use of assistive technology because of the

potentially high cost. Due to the fact that some forms of assistive technology can be costly, it is

even more pertinent that assistive technology teams choose an appropriate device for each

individual need (Dyal et al., 2009). For example, one unique student might benefit from an

assistive technology software package that costs more than $1,000 (Zascavage, 2009). Assistive

technology teams and educators must utilize all resources available in order to obtain the

different assistive technologies. Zascavage (2009) reports, "School districts can access a variety

of providers to assist with acquiring AT for students" (p.51). For example, in the state of Ohio,

the Special Education Regional Resource Centers will loan out assistive technology devices to

school districts in need, at no cost (Zascavage, 2009). According to Netherton (2006), there are

several state assistive technology programs available such as: North Carolina Assistive

Technology Program (NCATP) which "provided technical consultations to 7,770 individuals

including demonstration of equipment to help individuals select appropriate devices in the 2003-

2004 program year alone, North Dakota Interagency Program for Assistive Technology (IPAT)

which provides assistive technology assessments, assistive technology trainings, demonstrations,

and teleconferences that benefit service providers throughout the state of North Dakota and

Virginia Assistive Technology System (VATS) which developed a statewide inclusive system of

assistive technology to aid its citizens with disabilities in accessing assistive technology services

and devices (Netherton & Deal, 2006, p. 15). Each of these respective programs assists its

citizens who might benefit from the use of assistive technology. It is also important to note that

it is the responsibility of the school district to pay for any assistive technology that is included in

a particular student's IEP (Dyal, 2009). Conversely, there are some assistive technology devices

and services that serve medical needs rather than educational needs, thus the school district is not

obligated to pay for these and private insurances, Medicare, and Medicaid help instead (Dyal et

al., 2009, p.559).   Although there are many obstacles when it comes to the proper research and

implementation of assistive technology, with adequate training and education regarding

legislation and implementation, assistive technology is a strong support for students with

physical disabilities in the classroom setting.

What is muscular dystrophy and how does AT benefit?

One specific physical disability known as Duchenne muscular dystrophy, which is the

most common type of muscular dystrophy affects approximately 1 in 3,500 births (Heller, Mezei,

& Avant, 2008, p.15). In order for a disorder to be categorized as a muscular dystrophy, it is

required to meet four different measures. The first criteria is that it is a primary myopathy,

which is a disease of the muscle (Heller et al., 2008). The second criteria is that it is genetically

based, the third is that it has a progressive course and finally the fourth criteria is that there are

signs of degeneration and death of the muscle fibers at any phase in the course of the disease

(Heller et al., 2008). When it comes to Duchenne muscular dystrophy, it is classified as an X-

linked, autosomal recessive genetic disorder. This means the mother carries the DMD

(Duchenne Muscular Dystrophy) gene and could potentially pass it on to her sons (Heller et al.,

2008). According to (Heller et al., 2008), about 70% of Duchenne muscular dystrophy cases

"are the result of direct acquisition of the defective gene from the mother, while the remaining

30% appear to be the result of spontaneous mutations in which no family history is

present"(p.15). It is also important to note that in rare cases, females acquire DMD through

spontaneous mutation (Heller et al., 2008).

Students who have this specific type of muscular dystrophy, known as Duchenne, have

very distinctive technology needs because the disease is degenerative. Like many students with

disabilities, students with Duchenne muscular dystrophy have ever-changing needs, as their

disease progresses. The signs of DMD, which typically surfaces between the ages of two and five are as follows: Trendelenburg gait, which is a waddling gait, Gower's sign, which is the inability to stand up without walking one's hands up one's legs to straighten up into a standing position and pseudohypertrophy which is when the calf looks extraordinarily muscular. This is because fat cells are actually replacing muscle cells in legs (Heller, 2008). Currently, there is not a cure for Duchenne muscular dystrophy (C.L. Webb, 2005, p.385).

Due to the disease's degenerative nature, it is essential that the assistive technology that is made available to them, fits their specific needs. For example a seven year old child who has DMD might use one specific assistive technology that year and then require a completely different technology when he reaches the age of 8. This is all based on how fast the disease progresses. It is up to the assistive technology team as well as input form the parents as to what needs to be changed or modified when it comes to the appropriate assistive technology. According to Heller (2008), "making ongoing monitoring and assessment a vital part of their education programming" (p.15) is essential. If something is not working, it must be reassessed and changed. Heller (2008) also states that one of the challenges is that teachers may not have a solid understanding of how DMD progresses, therefore they are unable to adapt the child's assistive technology to best meet their changing needs. The result, according to Heller (2008), is "AT not being provided in a timely manner, or not at all, contributing to poor school performance."(p.15) Heller (2008) goes onto state that when the student, parents, and teachers are taught how to selectively choose and then implement the appropriate assistive technology, it has the ability to sustain and lengthen the student's independence in carrying out many different functional tasks.

Students with Duchenne muscular dystrophy may need varying types of AT. For example, one student may need something as low tech as a slant board and another student, whose DMD is in a more advanced stage may need a more high-tech assistive technology like a laptop with an alternative input (Heller, 2008). This is where the vital role of the education team and their understanding of the disease comes into play. Assistive technology can significantly improve the ability for students to complete important functions, so long as it is researched, understood and well thought out for each individual student. It is also stated that in two of her mentioned case studies, "ongoing assessment was defined by this school system as weekly discussions and meeting at least every six weeks to talk with the teacher and student in person and to visually assess the student" (Heller et al., 2008, p. 16).

How do you select an appropriate AT?

Ideally, schools should have an Assistive Technology team put in place. This team would be responsible for each child's assistive technology needs based on the current stage of their disability. Heller (2008) states that a typical assistive technology team might consist of the general education teacher, the special education teacher, the assistive technology specialist, the student, his or her parents, the physical therapist as well as the occupational therapist. Creating an assistive technology team, further supports the idea that the use of assistive technology is something that should be taken seriously. If a certain assistive technology is put in place for a student to use, but does not grow with them, it ultimately hinders the student's potential to function as independently as possible. According to (Marino, Marino, & Shaw, 2006), teams should "collect preliminary data using a systematic, multi-dimensional approach, prior to AT implementation, in order to establish the viability and efficacy of any AT intervention" (p.21). It is important for educators to understand that choosing a specific assistive technology for an

individual student is not simply choosing what one thinks may work. Research, data collection

and understanding of legislation must all be taken in to consideration when choosing what will

work best. Marino et al. (2006) reports, "once an assessment of the student's AT needs within

the context of the learning environment is complete, IEP teams can recommend specific AT

devices and services" (p.22)

An assistive technology specialist has a very vital role in the proper use of assistive

technology. His or her responsibilities are as follows: "suggesting appropriate assistive

technology based on assessments, monitoring implementation of the assistive technology, and re-

revaluating the assistive technology as needed" (Heller, 2008, p. 16). According to Heller

(2008), the most important member of the assistive technology team is the student. Regardless

of the physical and or mental impairment a child might have, it is up to them to use and put a

value on whether or not the assistive technology is helping them. Heller (2008) goes on to state

that "active student involvement decreases the likelihood that the technology will be abandoned"

(p.16).

Summary

When properly chosen, assistive technology can benefit students with multiple disabilities

tremendously. Although there are thousands of devices available, it can be a daunting task to

figure out which device works best for each unique student. It is imperative that teachers, support

staff as well as the families work together to decide which assistive technology device will work

best to support the student. Teachers and staff must utilize their resources. Whether that means

attending professional development, reaching out to the assistive technology liaison or team, or

sitting down and meeting with a parent to discuss what they feel might work best for their child, it

must be done. The advancing technology is something that has the potential to be underutilized if

not researched and implemented appropriately. Yet if appropriately chosen, assistive technology can dramatically help a student with multiple disabilities in the education setting.

Methodology

Context

This survey was conducted in Rochester, NY and surrounding areas. The majority of the survey respondents work in suburban school districts. Each of the survey takers hold a position within some sort of educational building or setting. This survey was conducted in this specific area because the researcher is from this area. This survey was spread through social media and via email. It is important to note that some of the survey respondents may have lived outside of the Rochester area but this is not known because this is an anonymous survey.

Participants

This survey was sent out to several different types of educational staff. There were no pseudonyms needed as this was an anonymous survey. There were eighteen survey respondents in total. Of the eighteen respondents, five were general education classroom teachers, nine of the respondents were special education teachers, one respondent was an intervention specialist, one respondent was a specialist teacher and two respondents classified themselves as "other". The educational role the "other" respondents identified themselves as was a teaching assistant and a substitute teacher.

Researcher Stance

I am currently certified in Childhood Education (birth-6). I am working towards a Master's of Science in Special Education at Saint John Fisher College. Currently I work as a

substitute teacher in local school districts. I also nanny for a local family as well. I became

interested in assistive technology and students with multiple disabilities for a few different

reasons. As a high school student I was a camp counselor for a local summer camp for children

and young adults with muscular dystrophy. There I was exposed to all sorts of assistive

technology and wondered how it all worked. I also had several different practicum and student

teaching placements in classrooms that had students who utilized all different types of assistive

technology. I found it interesting and exciting that there was so much out there to assist and

support people of all ages, more specifically the age group that I tend to work with. I also find it

intriguing that assistive technology is not just an iPad or motorized wheelchair. Assistive

technology can be as simple or low tech as a pencil grip or highlighter. I wanted to become more

knowledgeable as to how I can support my future students who might need to use some form of

assistive technology.

Method

        The purpose of this study was to investigate how assistive technology is utilized in

today's classrooms, whether or not educators feel knowledgeable enough to appropriately choose

a device and whether or not it is effective. To gather data, a self-made survey was created and

then sent out to several area teachers and appropriate support staff via email and a social

networking website. From there, it was spread to many educators both locally and throughout the

country.

Procedures

First, thirteen survey questions were created. Then, the electronic survey was created using Qualtrics which is a web-based software that allows users to create and generate reports. Finally the survey link was sent out via email and social media for educators to complete.

No consent was needed

This was an anonymous survey. The names and personal information of the survey respondents was not taken. The respondents were made aware that the survey they were taking was an anonymous survey.

Data Collection

I collected my data through a self-made survey. The survey was created using Qualtrics which is a web-based software that allows users to create surveys and generate reports. This software is made available to all students at Saint John Fisher College. The survey contained thirteen questions. The types of questions asked were as follows: nine multiple choice questions and four short response questions. Of the nine multiple choice questions, four of the questions asked the respondents to check all that apply. The survey was sent out to several different educators via email address. Email addressed were obtained from school websites as well as through personal connections I have with specific people in the education field. This survey link was also posted on my personal Facebook page with the following message: "To any of my teacher friends or those who work with students on a daily basis in a classroom setting (any age/grade level): I am finishing up my final project for graduate school and would so appreciate if you would take my survey! The survey is about assistive technology and will take about 5 minutes of your time. Also if you know anyone that might be willing to take it please forward my link or tag them smile emoticon Thank you so much!"

Data Analysis

Question number 1: Which of the following best describes your educational role?

Results:

General Education Classroom Teacher: 5 respondents, 28%

Special Education Teacher: 9 respondents, 50%

Intervention Specialist: 1 respondent, 6%

Resource teacher: 0 respondents, 0%

Specialist Teacher (Art, Library, PE, Music): 1 respondent, 6%

Occupational Therapist: 0 respondents, 0%

Other (please specify): 2 respondents, 11% (Teaching assistant and substitute teacher)

Analysis of the results:

Although the majority of the respondents, nearly half, classified themselves as a Special Education Teacher (47%), there was a wide range of people with different educational roles that participated in the survey. The fact that Special Education Teachers represented half of the survey respondents could be because they may have more direct interaction with students who utilize assistive technology in a classroom setting.

Questions number 2: Do you have student in your classroom that uses assistive technology? If yes, how many students?

Results:

Yes: 16 respondents have 1 student that utilizes assistive technology

Analysis of the results:

Question number 3: What disability best describes your student(s)? Check all that apply.

Results:

Physical disability: 4 respondents, 25%

Learning disability: 8 respondents, 50%

Deaf: 3 respondents, 19%

Visual disability: 2 respondents, 13%

Legally blind: 1 respondent, 6%

Brain injury: 2 respondents, 13%

Intellectual disability: 4 respondents, 25%

Psychiatric disability: 0 respondents, 0%

Hard of hearing: 2 respondents, 13%

Other (please specify): 6 respondents, 38% (Non-verbal, Autism 4 respondents, OCD, ADHD)

Analysis of the results:

The largest population of students utilizing assistive technology, according to my survey

respondents, are students with learning disabilities. Exactly 50% of the survey respondents have

at least one student in their classroom with a learning disability that utilizes assistive technology.

Although there was not a choice for Autism, respondents were able to choose "Other" and then

specify their student's disability. According to the results of the survey, 4 of the respondents or

25% of them had at least one student with autism in their classroom that utilizes assistive

technology. Another 4 respondents have at least 1 student in their classroom with an Intellectual

disability. In addition, 4 of the survey respondents have at least 1 student in their classroom with

a physical disability. It is important to note that survey respondents were given the opportunity

to select multiple answers for this question. This option was given for two reasons: one student

can have multiple disabilities and survey respondents were asked how many students they have

in their classroom that utilize assistive technology. Therefore, respondents may have selected 1

or more answers for this question.

Question number 4: What kind of assistive technology does he/she use? Check all that apply.

Results:

Alternative input devices: 4 respondents, 25%

Screen readers: 3 respondents, 19%

Speech recognition or voice recognition programs: 3 respondents, 19%

Text-to-Speech (TTS) or speech synthesizers: 3 respondents, 19%

Hearing aids: 5 respondents, 31%

Wheelchair: 2 respondents, 13%

iPad/tablet: 10 respondents, 63%

Other: 2 respondents, 13% (PECS communication board, inappropriate answer)

Analysis of the results:

Of the 19 survey respondents, 16 respondents answered this particular question. The majority of

respondents or 63% of them identified an iPad or tablet as being the type of assistive technology

their student(s) with a disability uses in their classroom. With the ever-changing advancement of

technology that is more readily available, this could be one reason why this particular assistive

technology is utilized the most.

Question number 5: How often does the student use his/her assistive technology?

Results:

Daily: 12 respondents, 71%

2-3 Times a Week: 3 respondents, 18%

Once a Week: 1 respondent, 6%

2-3 Times a Month: 0 respondents, 0%

Once a Month: 0 respondents, 0%

Less than Once a Month: 0 respondents, 0%

Never: 1 respondent, 6%

Analysis of the results:

Of the 19 survey respondents, 17 respondents answered this question. Those who answered this

question were allowed to select one choice. Of the 17 respondents to this question, 16 of them

have a student who uses assistive technology at least once a week. One respondent claims their

student(s) never uses their assistive technology. The majority of the respondents or 71% of

them, have at least one student in their classroom who utilizes assistive technology on a daily

basis. 18% or 3 of the 17 respondents have students who use assistive technology 2-3 times a week while 1 respondent has a student who uses his/her technology once a week respectively. This could illustrate the effectiveness of each student's assistive technology because it is being utilized on a daily basis.

Question number 6: Assistive technology is intended to assist this student(s) in which specific area(s)? Please check all that apply.

Results:

Sensory: 3 respondents, 19%

Motor: 2 respondents, 13%

Cognitive: 11 respondents, 69%

Language: 13 respondents, 81%

Social: 10 respondents, 63%

Analysis of the results:

This survey question was answered by 16 of the 18 total respondents. This specific question gave the respondents the option to choose more than one answer. It is important to note that one respondent might have chosen 2 or more areas of need for the same student. Most of the respondents, or 81% of them work with or have at least 1 student that utilizes assistive technology for language needs. Eleven respondents or 69% have students who utilize assistive technology for cognitive needs. Ten respondents have at least one student who utilizes assistive technology for social needs.

Question number 7: Do you feel that your undergraduate/graduate program(s) provided adequate

instruction regarding assistive technology in the classroom?

Results:

1. No

2. I don't think I had adequate training regarding assistive technology however I am not certified

in Special Education and if I was, I feel like I would have had more information about it.

3. A small amount

4. No

5. No

6. Graduate not undergraduate

7. Learned about the options available but not much experience with it hands on.

8. Not really

9. We were made quite aware of the variety of assistive devices available.

10. No.

11. No!!!!

12. No

13. Somewhat. I took one course on assist ice technology.

14. No not particularly. I had to learn all on my own.

15. No. I think there needs to be more educating of college students of what is available and how it can be used. This includes using Elmo's and SmartBoards I think. Assistive tech is talked about/mentioned but it would be nice to have hands-on experience with them in the college setting, and not just during a single class bot over a semester or half semester.

16. I did not receive much training in regards to assistive technology in the classroom during my college career

17. Yes, I took a class on assistive technology.

Analysis of the results:

Of the 19 total respondents, 17 respondents answered this specific question. The majority of the respondents do not feel that their undergraduate and graduate programs provided adequate instruction regarding assistive technology in the classroom. One of the 17 respondents stated that they felt they received adequate instruction and this was because they took a class on assistive technology. Overall, this could mean that pre-service programs need to take a closer look at what might be a valuable addition to their program, such as a course or workshop on the use of assistive technology in the classroom.

Question number 8: How does your school/district support you in being able to obtain and use assistive technology devices for your student(s)? Is there a team in place to support you?

Results:

1. Yes, our speech therapist is a huge help. We work together to beat accommodate out students.

2. We've had trainings on how to use the devices. We also have mentors who have used the devices before who can help us.

3. CSE

4. Yes

5. It provides the assessments, devices and training for all assistive needs of students

6. Yes

7. No parents got the device for him. Insurance may have played a role in the purchase.

8. Fairport has an assistive tech liaison who works for the special education director. She and the OT assess the student's need and appropriate-ness for the use of the tech and then offers us a tutorial.

9. Very supporting in terms of obtaining devices. There is far less support in proper use of the technology and linking it with instruction.

10. Special Education dept. is in control of ordering and using devices with student. Aide always uses it with the student.

11. Yes, There is a student success team that is in place to get supports for students.

12. In Early Intervention and preschool special education programs, we work with specific therapists and evaluators in which AT is their specialty. They work with the family and team members to help us use the devices in our therapeutic areas and throughout their daily routine.

13. My school obtains the technology through BOCES or providing districts. Many times it is used in resource room or during speech services

14. I was given a manual and told to implement the strategies. I know there is a team in place, but I have never been in contact with them nor do I know how to get their support.

Analysis of the results:

For this question, 14 respondents chose to answer. Of the 14 respondents, the majority felt a sense of support from their school. Many respondents noted that there are specific staff and/or teams in place to help students obtain an appropriate assistive technology device. Only one respondent noted that he/she did not feel supported when it came to helping the student obtain an assistive technology device in the classroom. The respondent also noted that he/she did not know how to get support from the school. The fact that the majority of the respondents felt supported by their district and or school might mean that schools understand the importance of finding and then correctly implementing the most fitting device for those students that need them.

Question number 9: What were/are the biggest obstacles that you/your student faced in obtaining the proper assistive technology? Please check all that apply.

Results:

Lack of funding: 5 respondents, 31%

High cost: 3 respondents, 19%

Lack of training: 1 respondent, 6%

Long insurance approval process: 3 respondents, 19%

Lack of knowledge on what assistive technology devices are available: 2 respondents, 13%

No barriers: 8 respondents, 50%

Other: 1 respondent, 6% (This respondent stated that his/her barrier was having to go through OT first)

Analysis of the results:

For this survey question, there were 16 total responses. Of those 16 responses, 31% stated that the lack of funding was the biggest obstacle they faced when trying to obtain assistive technology for their student. It's also important to note that 50% of the respondents stated that they faced no barriers when obtaining assistive technology for their students. The second most noted obstacle respondents faced was the high cost of the desired devices at 19%. This could mean that those who help fund assistive technology need to reconsider the current need and how effective AT can be for certain students.

Question number 10: Has the assistive technology being used in by your student help them achieve their individual goals?

Results:

Yes: 5 respondents, 31%

Somewhat: 11 respondents, 69%

No: 0 respondents, 0%

Analysis of the results:

For this question there was 16 total responses. Of those 15 responses, 69% of them felt that the assistive technology being used by their student(s) is somewhat helping them achieve their individual goals, while 31% state that, yes, it is definitely helping them. None of the respondents answered "no" to this question. This illustrates that those in charge of choosing and then implementing an appropriate devices are doing their job. The fact that all respondents to this

question feel as though the assistive technology being used is at least somewhat effective shows the need for assistive technology in our classrooms.

Question number 11: How do you perceive the availability of assistive technology in your school? Please explain.

Results:

1. Our school has a wide variety of assistive technology. If used properly it can really help the students become more social and express their wants and needs. There is a long process to get a device for a student which really holds back the student from communicating the best way possible.

2. We have some assistive technology devices that are available to us, however, I wish we had more.

3. If some makes a case for it the district provides they do not offer it up unless the family or s teacher makes a strong case

4. It's very easy to get what we need for our students.

5. It could be more easily accessed and I don't understand the necessity of student having to have an OT evaluation before an assisted tech evaluation

6. While there are obviously limits, it seems as though most requests for assistive technology is considered and made available.

7. No problem getting it and using it when needed.

8. Assistive technology is readily available in my district.

9. I know my school had a CSE department that would assist in getting assistive technology but I am not sure how available it is. I have never had to go through the process. I assume you would need to go through an ordering process

10. In EI it is a long process to get approved and evaluated for specific devices. Once the family has gone through this process and the device has been trailed and chosen, it belongs to them.

11. Being in a private setting, a student receives assistive technology if it is part of their IEP or if a speech or resource room teacher uses it with the students (ex. iPads are used frequently)

12. Low availability - all assistive technology is teacher created/driven.

Analysis of the results:

For this survey question, there were 12 total responses. The majority of respondents state that yes, assistive technology is available in their school. Most of those respondents noted that it was a process to get those devices. Many respondents noted once again that it takes quite a bit of time to obtain these devices and that they are not just easily handed out. The responses for this question might mean that schools and districts are doing a good job providing devices, but might need to reevaluate how long it takes for the approval process to take.

Question number 12: What is your level of knowledge regarding assistive technology?

Results:

No knowledge: 0 respondents, 0%

Little knowledge: 2 respondents, 11%

Some knowledge: 9 respondents, 50%

Good knowledge: 7 respondents, 39%

Extensive knowledge: 0 respondents, 0%

Analysis of the results:

For this question, 18 out of the 19 total respondents answered. An overwhelming 50% of the

respondents stated that they have at least "some knowledge" regarding assistive technology.

Coming in second, 39% of respondents felt they had "good knowledge" regarding assistive

technology. None of the respondents felt that had extensive or no knowledge. This might

illustrate the fact that teachers are somewhat supported both in pre-service programs as well as

by their district when it comes to learning about assistive technology.

Question number 13: Are you interested in attending professional development in the form of

workshops or in-services regarding assistive technology?

Results:

Very interested: 5 respondents, 29%

Somewhat interested: 9 respondents, 53%

Neutral: 3 respondents, 18%

Not interested: 0 respondents, 0%

Analysis of the results:

For this question, 17 of the total 19 respondents answered. The majority of respondents or 53%

stated that they were "somewhat interested" in attending professional development regarding

assistive technology. Five respondents or 29% stated that they were "very interested" in

attending professional development. The responses might illustrate the fact that educators and staff feel that additional training and information would be beneficial to them and in some cases necessary.

Discussion

This research study yielded many important facts. First, the use of assistive technology in an educational setting is effective. If research and time is put into finding an appropriate assistive technology device for an individual student, the student will most likely have a higher chance of reaching their individual goals whether or not it is on their IEP. The research also illustrated the need for increased teacher preparation regarding assistive technology and a lack of confidence when it comes to choosing and implementing said devices. Teachers, parents and staff must sit down and communicate the needs of the student and how to go about choosing a device that will work best for him/her. They must then put together a strong case for why the student needs a specific device and do so in a timely manner so that the student can begin to benefit from assistive technology as soon as possible.

What would I do different?

For a select few survey questions I would have been a little bit more specific. There were questions that, because of wording, did not yield the exact answer I was looking for. I would have also liked to pinpoint the age range of the survey respondents. I believe knowing the age of the respondent, while still keeping their name anonymous, would tell me whether or not it was realistic for them to have had a course or workshop on assistive technology. For example a teacher of an older generation would not have likely had a course on AT as it wasn't as advanced

or prevalent the farther you go back. I would have also liked to survey how the teachers and

staff go about furthering their understanding of AT (if at all) before asking them if it is

something they are interested in.

References

Berry, B. E., & Ignash, S. (2003). Assistive technology: Providing independence for individuals with disabilities. *Rehabilitation Nursing, 28*(1), 6-14. Retrieved from http://search.proquest.com/docview/218271580?accountid=27700

Coleman, M. m., & Cramer, E. e. (2015). Creating meaningful art experiences with assistive technology for students with physical, visual, severe, and multiple disabilities. *Art Education*, *68*(2), 6-13

Davis, T. N., Barnard-Brak, L., & Arredondo, P. L. (2013). Assistive Technology: Decision-making Practices in Public Schools. *Rural Special Education Quarterly*, *32*(4), 15-23

Dyal, A., Carpenter, L. B., & Wright, J. V. (2009). Assistive Technology: What Every School Leader Should Know. *Education, 129*(3), 556-560. Retrieved from http://search.proquest.com/docview/196421449?accountid=27700

Hammond, J., & McCann, E. (2003). Duchenne muscular dystrophy and physical education: A case study. (Undetermined). *Physical Educator - Journal Of Physical Education New Zealand*, *36*(1), 82-92.

Heller, K. W., Mezei, P. J., & Avant, M. T. (2008). Meeting the Assistive Technology Needs of Students with Duchenne Muscular Dystrophy. *Journal Of Special Education Technology*, *23*(4), 15-30.

Hemmingsson, H. h., Lidström, H., & Nygård, L. (2009). Use of Assistive Technology Devices in Mainstream Schools: Students' Perspective. *American Journal Of Occupational Therapy*, *63*(4), 463-472.

Hinton, V. J., De Vivo, D. C., Fee, R., Goldstein, E., & Stern, Y. (2004). Investigation of Poor Academic Achievement in Children with Duchenne Muscular Dystrophy. *Learning Disabilities Research & Practice (Wiley-Blackwell)*, *19*(3), 146-154.

Judge, S. (2006). Constructing an assistive technology toolkit for young children: Views from the field. *Journal of Special Education Technology, 21*(4), 17-24. Retrieved from http://search.proquest.com/docview/228478319?accountid=27700

Kelly, S. M., & Smith, D. W. (2011). The Impact of Assistive Technology on the Educational Performance of Students with Visual Impairments: A Synthesis of the Research. *Journal Of Visual Impairment & Blindness*, *105*(2), 73-83.

Marino, M. T., Marino, E. C., & Shaw, S. F. (2006). Making Informed Assistive Technology Decisions for Students With High Incidence Disabilities. *Teaching Exceptional Children*, *38*(6), 18-25.

Netherton, D. L., & Deal, W. I. (2006). Assistive Technology in the Classroom. *Technology Teacher*, *66*(1), 10-15.

Okolo, C. M., & Diedrich, J. (2014). Twenty-Five Years Later: How is Technology Used in the Education of Students with Disabilities? Results of a Statewide Study. *Journal Of Special Education Technology*, *29*(1), 1.

Quinn, B. S., Behrmann, M., Mastropieri, M., & Chung, Y. (2009). Who is using assistive technology in schools? *Journal of Special Education Technology, 24*(1), 1-13. Retrieved from http://search.proquest.com/docview/228470332?accountid=27700

Webb, C. w. (2005). Parents' perspectives on coping with Duchenne muscular dystrophy. *Child: Care, Health & Development*, *31*(4), 385-396. doi:10.1111/j.1365-2214.2005.00518.x

Wise, P. H. (2012). Emerging technologies and their impact on disability. *The Future of Children, 22*(1) Retrieved from http://search.proquest.com/docview/1519298262?accountid=27700

Zascavage, V., & Winterman, K. G. (2009). What middle school educators should know about assistive technology and universal design for learning. *Middle School Journal, 40*(4), 46-52. Retrieved from http://search.proquest.com/docview/217440690?accountid=27700