

A Look at Employment for Adults Who Use Augmentative and Alternative Communication

By

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Abstract

This research study examined employment for adults who use augmentative and alternate communication (AAC). A self-compiled, 54-question survey was created using SurveyMonkey and disseminated via listservs and social media. Participants included twelve adults, between the ages of 23 and 65, who used AAC to communicate and were employed. All participants lived in the United States and had been diagnosed with neurological and/or developmental disabilities. Information was gathered in the following areas: (a) demographics, (b) AAC systems used in the workplace, (c) the job-search process, (d) on-the-job training, (e) barriers to employment, and (f) supports required for employment. Based on the findings of this study, the most common barriers to employment for these individuals include educational barriers, AAC system barriers, job-finding barriers, job-training barriers, negative societal attitudes, funding and benefits barriers, and transportation barriers. Supports used in the workplace include AAC, transportation, personal care assistants for activities of daily living, computer modifications, desk/location modifications, flex time, telecommuting, personal assistant/job coach who helps complete work-related tasks, and frequent breaks in work tasks.

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Chapter 1: Review of the Literature

Augmentative and Alternative Communication

More than 3.5 million Americans have such severe communication disabilities that they cannot use natural speech as their sole means of communication (Beukelman & Mirenda, 2005). These individuals require alternate forms of communication, such as orthography, picture drawing, gestures, alphabet boards, picture exchange communication systems (PECS), and speech generating devices (SGDs). The American Speech-Language-Hearing Association (ASHA) describes augmentative and alternative communication (AAC) as a means to compensate for “temporary or permanent impairments, activity limitations, and participation restrictions of persons with severe disorders of speech-language production and/or comprehension” (Beukelman & Mirenda, 2005, p.4). AAC can be electronic (e.g. SGD such as text-to-speech on a computer) or non-electronic (e.g. gestures, or picture drawings). Electronic AAC devices are also known as assistive technology (AT).

A wide variety of people of all ages need access to AAC. Many congenital and acquired conditions can cause the inability to speak or communicate. According to Beukelman and Mirenda (2005), cerebral palsy, autism, developmental apraxia of speech, and intellectual disability are the most common congenital causes that may result in the need for AAC. Acquired impairments that can cause severe communication impairments include spinal cord injury, amyotrophic lateral sclerosis (ALS), traumatic brain injury, stroke, and multiple sclerosis (2005). Speech-language pathologists (SLPs) are responsible for guiding a client through the device-selection process and for teaching them to communicate successfully with their device. SLPs must be knowledgeable on AAC to ensure that their clients choose the most appropriate device for their skill level and communication needs.

Advances in technology in the past two decades have led to improvements in AAC. Cameras are now a standard feature for most SGDs. A camera allows individuals to customize their device by pairing programmed words and phrases with real-life pictures. Message prediction is another new and improved feature of SGDs. Messages are predicted at the single letter level, word level, or phrase/ sentence level (Beukelman & Mirenda, 2005). Message prediction can increase communication rates for individuals who use AAC. Many newer devices are able to connect to the internet. Internet provides accessibility to things such as email, entertainment, and social networking that may have previously been laborious or unobtainable. Design and technology improvements have led to more portable and durable devices. These advances provide a greater opportunity for people who use AAC to participate in social activities, pursue post-secondary education, live independently, and obtain a job .

Employment

Employment plays a key role in personal self-image and quality of life for adults (McNaughton, Light, & Groszyk, 2001). Social relationships, community involvement, financial self-sufficiency, and residential living are all linked to meaningful employment (Trainor, Carter, Owens, & Sweeden, 2008). At present, however, employment rates are extremely low for people who rely on AAC. A national survey by Light, Stoltz, and McNaughton (1996) found only 25 individuals who used AAC and worked more than 10 hours a week (McNaughton & Arnold, 2010). Individuals with multiple disabilities, including those who use AAC, have the lowest employment rates of all disability groups (McNaughton & Bryen, 2007). Bryen and colleagues reported that the rate of employment for people with disabilities who use AAC is approximately 15% (2007). Researchers have acknowledged several barriers to employment for individuals who use AAC. These barriers include (a) communication and AT barriers, (b) few opportunities to

find jobs, (c) poor educational preparation, (d) lack of appropriate supports, and (e) negative societal attitudes.

Barriers: Communication and AT

In a 2007 survey, both employers and individuals who use AAC reported that effective communication is a crucial skill for employment success (Bryen et al., 2007). The majority of employers emphasized the importance of having good communication skills as well as a “standard voice” (Bryen, et al., 2007). However, individuals who rely on AAC often have limited communication skills due to their complex communication needs. Employment research reports that both core vocabulary and work-site-specific fringe vocabulary are necessary for “fitting in” in the work place (McNaughton & Arnold, 2010). Accessing vocabulary needed for work place social interactions is often difficult and time consuming. Individuals who are employed and use AAC report feeling frustrated by reduced speed of communication. Many people who use AAC feel the need to edit their thoughts for the sake of time; which inhibits their ability to fully express themselves and to participate in conversations (McNaughton, Light, & Groszyk, 2001). An employer described the difficulty of using AAC in the workplace by saying “In group situations it is easy for the AAC user to get ‘stepped on’. They really need to work extra hard” (Bryen, Potts, & Carey, 2007, p. 135).

Having a natural-sounding or “standard voice” is nearly impossible for people who rely on AAC. Computerized speech output is often monotone and unnatural. Individuals who use AAC report that their speech is often unintelligible to unfamiliar listeners (McNaughton & Bryen, 2007). One woman who uses AAC and is employed described the voice options on her device as “whiny” and arrogant-sounding (McNaughton, Light, & Groszyk, 2001). She also

stated that it is difficult to tell a joke or have emphasis on specific words or phrases (McNaughton, Light, & Groszyk, 2001). Another group of AAC users reported participation limitations in specific settings due to low volume levels on their devices (McNaughton & Bryen, 2007).

People who use AAC have described many other challenges of using AAC in a work setting; such as size, weight, battery life, and technology limitations. Some devices are big and cumbersome to move, which confines users' to one spot in the office. In addition, limited battery life of electronic devices is not helpful. Employers expect people to be able to switch from one communication function to another with ease. For example, employees are expected to be able to present a speech and answer questions from the audience, or to take notes and contribute information to a meeting (McNaughton & Bryen, 2007). Some devices are not capable of switching between functions, while others can but do so very slowly. These technological limitations hinder employees' performance and participation in the work setting.

Barriers: Job Finding Opportunities and Selection Process

Employment-based research shows that referrals (from employees or from a network of outside contacts) are one of the most common means of job recruiting (Bryen, Potts, & Carey, 2007). Often times finding a job is less about what you know and more about whom you know. Having large employment-related social networks greatly increases the chances of finding a job. Therefore, a large percentage of the job market is hidden, because it is only available through informal networks (Hansen, 2000).

In a 2004 study, Carey et al. found that adults who use AAC have limited social networks. These individuals with weak social networks are less likely to learn about employment

opportunities. Also, employers are less likely to learn about qualified individuals who use AAC but have limited employment-related networks (Bryen, Potts, & Carey, 2007). Therefore, individuals who use AAC may be at a job-finding disadvantage regardless of their skills and qualifications.

The selection process poses additional barriers for persons who use AAC. The vast majority of employers require resumes and references from prospective employees. Individuals who use AAC often have limited work histories and limited social networks, and so will have difficulty providing this information (Bryen, Potts, & Carey, 2007).

Interviews are another major part of the selection process. Bryen, Potts, and Carey (2007) researched 48 jobs in 25 unique categories, and found that 98% required interviews for potential job candidates. The majority of individuals who use AAC need to receive interview questions in advance in order prepare responses and preprogram their device. However, only half of the employers in the study would allow access to interview questions in advance (Bryen, Potts, & Carey, 2007). Employers did allow alternate interview methods, such as computer chat rooms and email (Bryen, Potts, & Carey, 2007); but these can pose accessibility problems for some individuals who use AAC.

Barriers: Poor Educational Preparation

“Appropriate educational programs are key to employment success for individuals who use AAC” (McNaughton & Arnold, 2010, p.52). Educational programs help students develop areas of expertise prior to graduation. Unfortunately, young adults with disabilities are more likely to drop out of school and experience chronic unemployment, than their non-disabled peers (Hamm & Mirenda, 2006). Postsecondary education assists individuals in developing vocational

skills, establishing friendships, and transitioning to independent living (McNaughton & Byren, 2007). At present, individuals who use AAC are not accessing these benefits; individuals with disabilities and individuals who use AAC rarely receive postsecondary education (Hamm & Mirenda, 2006; McNaughton & Bryen, 2007).

Reduced participation in postsecondary education may stem from high school experiences of persons who use AAC. In a 2007 study, Light et al. found that high-schoolers who use AAC have difficulty making and maintaining friendships, low levels of support for AAC use (e.g. lack of teachers and educational assistants with AAC training), and challenges with academic demands and inappropriate curricula. Educational programs must provide academic support, strategies for managing academic demands, as well as appropriate curricula in order for students who use AAC to succeed in the workplace.

Literacy skills strongly impact the range and type of jobs available to individuals who use AAC (McNaughton & Arnold, 2010). According to a survey by Light et al. (1996) on employment for individuals who use AAC, participants with stronger literacy skills enjoyed jobs with better pay, had more opportunities for advancement, and reported higher levels of satisfaction. While participants with minimal literacy skills reported lower pay and expressed lower levels of job satisfaction than participants with stronger literacy skills (Light, Stoltz, & McNaughton, 1996). According to employers, the most important skills for success in the workplace are: math skills, literacy skills, good communication, problem solving, time-management, and technology skills (Bryen, Potts, & Carey, 2007). Both of these studies emphasize the need for an appropriate and accessible curriculum for individuals who use AAC.

Barriers: Lack of Appropriate Supports

The majority of individuals who use AAC have very little training on proper use of their device. People without disabilities typically receive 12 years of language and writing instruction, while people who use AAC are given 2-6 hours of instruction on how to use their device (Horton, Horton, & Meyers, 2001). There is a lack of trained professionals who are knowledgeable on AAC and can provide training and support to people who use AAC (McNaughton & Bryen, 2007). Individuals who use AAC and their caregivers report having AAC support from SLPs in the school setting; but find it hard to obtain services post-graduation (Hamm & Mirenda, 2006). Others reported having insufficient AAC support from teachers and educational assistants (McNaughton & Bryen, 2007). Older adults stated that their nurses and primary caretakers were “completely confused” by their AAC devices (McNaughton, Light, and Groszyk, 2001, p. 186).

Parents of individuals who use AAC as well as adults who use AAC both reported “insufficient knowledge and expertise of many service providers regarding AAC technologies and interventions” (McNaughton & Bryen, 2007; McNaughton, Light, & Groszyk, 2001, p. 188). Due to limited information provided by professionals, both groups researched AAC independently rather than through SLP services (McNaughton & Bryen, 2007; McNaughton, Light, & Groszyk, 2001). Lack of professional guidance leads to people choosing devices that are inappropriate for their cognitive abilities and skill level.

People who use AAC often require more than just AAC supports in the workplace. Many would benefit from using supported employment. Supported employment enables a person with a disability to work by supplying all appropriate training and support to them in the workplace

(Mawhood & Howlin, 1999). People who support individuals with disabilities (a) help persons with disabilities find appropriate jobs for their skills, (b) provide prior job training and on-the-job training, (c) advocate for the person with disabilities, (d) monitor the individual's progress, and (e) provide long-term support to ensure job retention (Mawhood & Howlin, 1996). Each individual requires different types and levels of support. Some supports (e.g. assistance completing job-related tasks) will fade over time, while others (e.g. transportation and toileting assistance) will remain constant.

In a 2001 survey, McNaughton and colleagues conducted a focus group discussion to investigate employment experiences of five adults with amyotrophic lateral sclerosis (ALS) who used AAC. The participants discussed specific supports that allowed them to continue participating in their work environments. These supports consisted of providing AT necessary to perform work responsibilities, making facility modifications (e.g. wheelchair and restroom accessibility, reserving a parking spot), providing personal care services, offering flexible schedules, and providing necessary supplies and equipment so individuals can work from home (McNaughton, Light, & Groszyk, 2001). Other employment supports for individuals who use AAC include transportation to and from work, on-the job training, modified interfaces (e.g. simplified email programs and calendars), adapted equipment (e.g. computer keyboard and mouse), and technical support and coaching (Bryen, Potts, & Carey, 2007; McNaughton & Arnold, 2010; McNaughton & Bryen, 2007). Lastly, employers and human resource personnel who are educated on AAC and other co-occurring conditions (e.g. ALS, autism, cerebral palsy) of their employees serve as a significant support. Many individuals who use AAC and their caregivers feel the need for greater vocational supports and services. Unfortunately, most

individuals report that their existing supports are inadequate because they are not individualized to their specific needs (Hamm & Mirenda, 2006).

Barriers: Negative Societal Attitudes

Individuals who rely on AAC identify negative societal attitudes as a barrier in obtaining and maintaining employment. Employers voiced concerns that individuals who use AAC may not meet job qualifications in terms of level of education, available human resources, and communication skills (Bryen, Potts, & Carey, 2007; McNaughton & Arnold, 2010). They were also worried about the hiring costs associated with persons who rely on AAC (McNaughton & Arnold, 2010). Others cited time management, AAC technology breakdown, and productivity concerns (Bryen, Potts, & Carey, 2007). A reoccurring issue mentioned by employers and individuals who use AAC was the inability to “fit in” and establish relationships in the workplace.

Establishing and maintaining friendships is difficult for people with complex communication needs (McNaughton & Bryen, 2007). As mentioned previously, many individuals are unfamiliar with AAC. Naïve communication partners typically do not initiate conversation with individuals who use AAC; and are reluctant to respond to communicative attempts from individuals using AAC (McNaughton & Bryen, 2007). Peer relationships are formed from multiple positive social interactions that are reinforcing for both individuals. Repeated experiences with dysfunctional interactions with individuals who use AAC result in negative peer attitudes and reduced motivation for future interactions (Soto & Zangari, 2009). Lack of social interaction in the workplace makes individuals feel isolated and decreases job satisfaction.

Individuals who use AAC in the workplace sometimes feel like outcasts because of their medical diagnosis. Frank, an adult with ALS who uses AAC, explained the negative reactions and attitudes he encountered on the job. He stated, “There is definitely a ‘stigma’ attached to receiving a terminal diagnosis. The first thing most people think about is separating the terminally diagnosed from the rest of the workforce” (McNaughton, Light, & Groszyk, 2001, p. 186). Some individuals with autism also feel isolated at work because they have difficulty appropriately initiating social interactions with coworkers (Mawhood & Howlin, 1999).

A Need for Further Exploration

AAC is a relatively new topic that is rapidly evolving. Many SLPs and other service providers are unaware of evidence-based practices to support individuals who use AAC. Current literature regarding employment for individuals who use AAC is sparse. More research is needed in order to break down barriers and develop appropriate service plans for this population. Obtaining information from individuals who are currently employed and using AAC will provide information about specific interventions, supports, devices, occupations, and training programs that are successful for different individuals. Additional research will hopefully raise awareness of the need for better AAC intervention and employment supports; and also offer hope and guidance to current job seekers.

Service professionals are responsible for providing clients with a range of options and information on AAC so that the clients are able to make educated decisions and actively participate in their intervention. However, research has shown that individuals with several years of disability experience are more knowledgeable on the needs of people with disabilities and better aware of government benefits than are able-bodied professionals (McNaughton, Light, &

Groszyk, 2001). More informed and better trained professionals will lead to more individuals who have appropriate devices for their skills and needs as well as more proficient AAC users. More research on employment for individuals who use AAC could increase knowledge of service providers, provide information on what supports are necessary in the workplace, increase employment-related networks, reduce negative societal attitudes, and ultimately increase employment rates and job satisfaction for individuals who use AAC.

Key Points of the Literature Review

- People with complex communication needs require alternate forms of communication known as AAC.
- These individuals face many challenges in obtaining and maintaining employment.
- People who use AAC may require specific supports in order to work efficiently and perform at their fullest potential.
- Meaningful employment is linked to higher quality of life.
- Research is needed in order to overcome the employment barriers and to increase employment rates for individuals who use AAC.

Questions of the Study

The purpose of this study is to examine employment and employment experiences for adults who use AAC. This study addresses six questions:

- (1) What are the demographics of individuals who use AAC and are employed?
- (2) What AAC systems are used in the workplace?
- (3) What is the job-search process like for adults who use AAC?

(4) What type and extent of job training is provided for individuals who use AAC?

(5) What are common barriers seen in the workplace for employees who use AAC?

(6) What workplace supports are necessary for employees who use AAC?

Chapter 2: Methodology

Participants

Participants in this study included twelve adults, between the ages of 23 and 65, who were employed and use AAC. All participants lived and worked in the United States and had been diagnosed with neurological and/or developmental disabilities. Nine participants had developmental disabilities, two had neurological disabilities, and one participant had both neurologic and developmental disabilities. Participants accessed this survey via email listservs and social media. Email listservs include Quality Indicators for Assistive Technology (QIAT), American Speech-Language-Hearing Association Special Interest Group 12, Augmentative and Alternative Communication (ASHA SIG 12), and Prentke Romich Company. The United States Society for Augmentative and Alternative Communication (USSAAC) and SHOUT (a nonprofit corporation for advocacy for employment for people who use AAC) posted links to the survey on their Facebook and Twitter accounts.

Materials

Materials included an information statement and self-compiled, 54-question survey (see Appendix). The information statement was attached to the beginning of the survey. This statement informed participants about procedures, the purpose of the study, benefits and risks of participating, approximated time needed to complete the survey, voluntary participation, and

contact information of the researchers. The survey was created on an online-survey development website called SurveyMonkey. The survey included demographic (13), dichotomous (9), multiple choice (13), rank order scaling (1), rating scale (7), and open-ended questions (11).

Procedure

This study was approved by the Institutional Review Board at the University of Kansas on December 20, 2013. The researcher contacted AAC organizations and groups via email and phone call to request dissemination of research survey on December 23, 2013. Participating organizations and groups shared the research survey through listservs or posted the survey on their social media sites. On February 1, 2014 researcher sent follow-up emails and posts. All data was collected online using SurveyMonkey from December 28, 2013 through February 26, 2014.

Design and Analysis

This study is a non-experimental, cross-sectional survey research design. SurveyMonkey was used to analyze data. Since the study is exploratory the number of respondents is rather limited, the statistical analysis is mainly based on univariate distributions, emphasizing model frequencies.

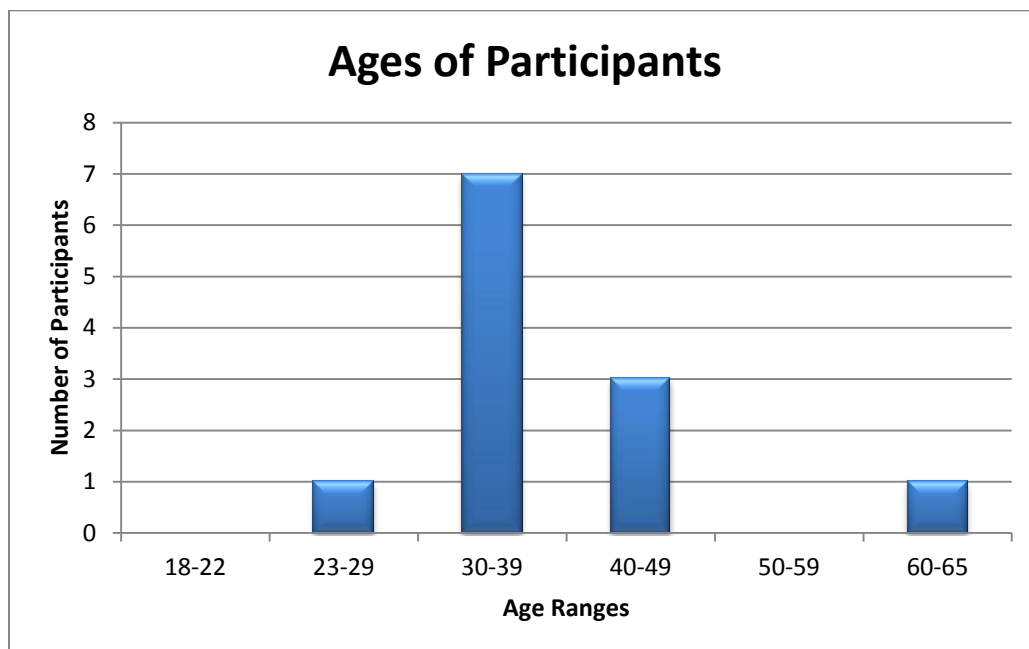
Chapter 3: Results

The results of this study focus on (a) demographics of participants, (b) AAC systems used by participants, (c) the job-search process, (d) job training, (e) barriers to employment, and (f) supports in the workplace.

Demographics

Twelve adults between the ages of 23 and 65 participated in this study (see Figure 1). Participants had diagnoses of neurological disabilities and concomitant neurological and developmental disabilities. Eight participants had cerebral palsy. One participant reported having a diagnosis of a neurological speech disability. One participant had diagnoses of autism spectrum disorder (ASD), Down syndrome, and sensory deficit. Another participant had an intellectual disability (ID) and developmental apraxia of speech. Another reported having a diagnosis of Motor Neuron Disease "possibly a form of ALS Specific to me."

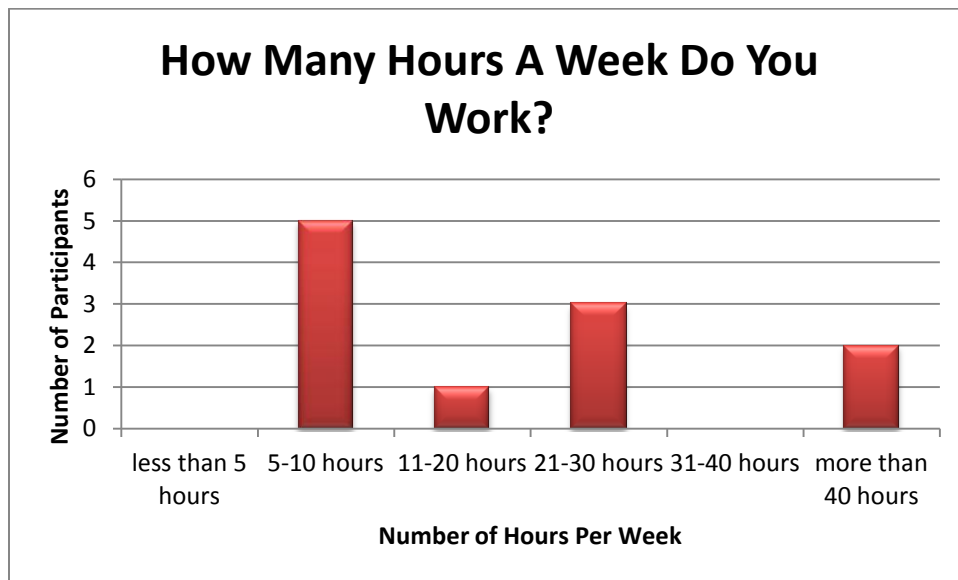
Figure 1



Of the twelve participants, eleven answered questions about their job title and employer. Occupations included Data Entry Specialist for an international bank, Senior Consumer Representative for DynaVox, Remote Troubleshooter for Prentke Romich Company (PRC), On-Call AAC Educator for PRC, President Speaker for BeCome: AAC, Independent Biomedical

Research Professional at Children's Hospital, Program Analyst, Artist and Dancer, Entrepreneur/ Owner and Operator of a successful snack company, AAC Assistant for a Vocational College, Grocery Store Bagger, and Freelance Sports Writer. Of the twelve participants, nine (75%) were permanent employees and three (25%) were temporary employees. The majority of participants (5) reported working 5-10 hours a week. One participant worked 11-20 hours a week, three worked 21-30 hours a week and two participants worked over 40 hours a week (see Figure 2). Eight participants said they were satisfied with the number of hours they work; and three (33.33%) said they would like to work more hours.

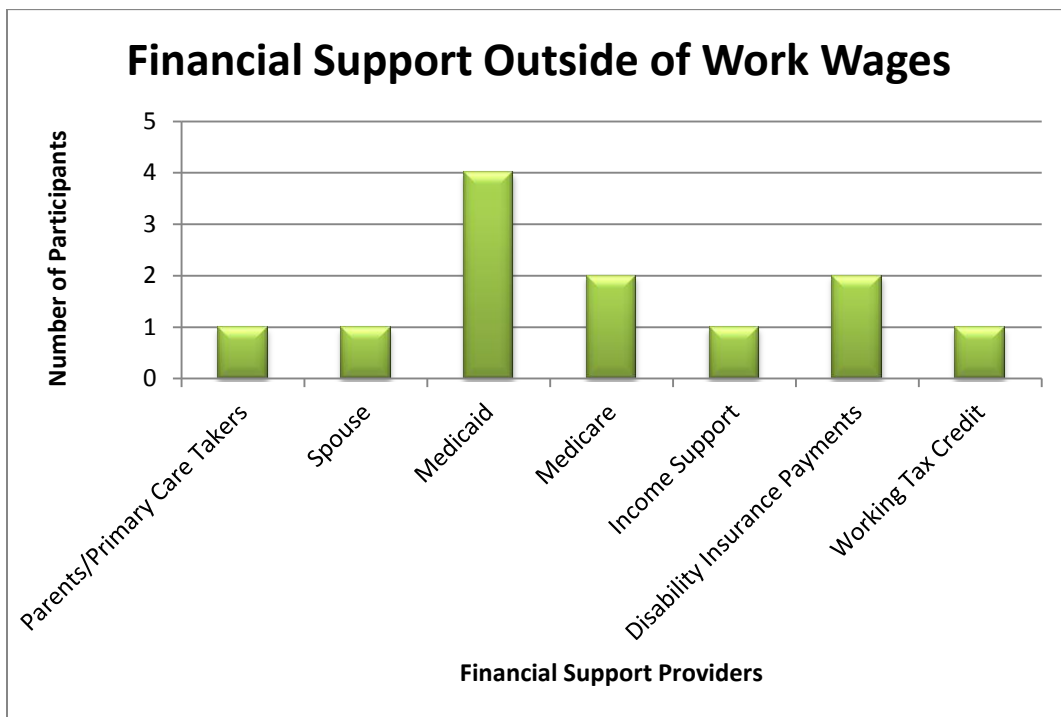
Figure 2



Three participants reported salaried employment, six reported making hourly wages, and three reported this was not applicable for their job. When asked to identify the category that reflects their hourly wages, one participant made less than \$3.25 an hour, one made between \$3.25-\$5.24 an hour, one participant made between \$5.25-\$7.24 and another made \$7.25-\$10.25. Two participants reported making \$10.26-\$13.25 and two reported making more than \$19.25 an

hour. Eight participants (66.67%) receive financial support outside of work from Medicaid (4 participants), Medicare (2 participants), disability insurance payments/ disability premiums/ Supplemental Security Income (SSI) (2 participants), parents or primary care takers (1 participant), spouses (1 participant), income support (1 participant), and working tax credit (1 participant) (see Figure 3).

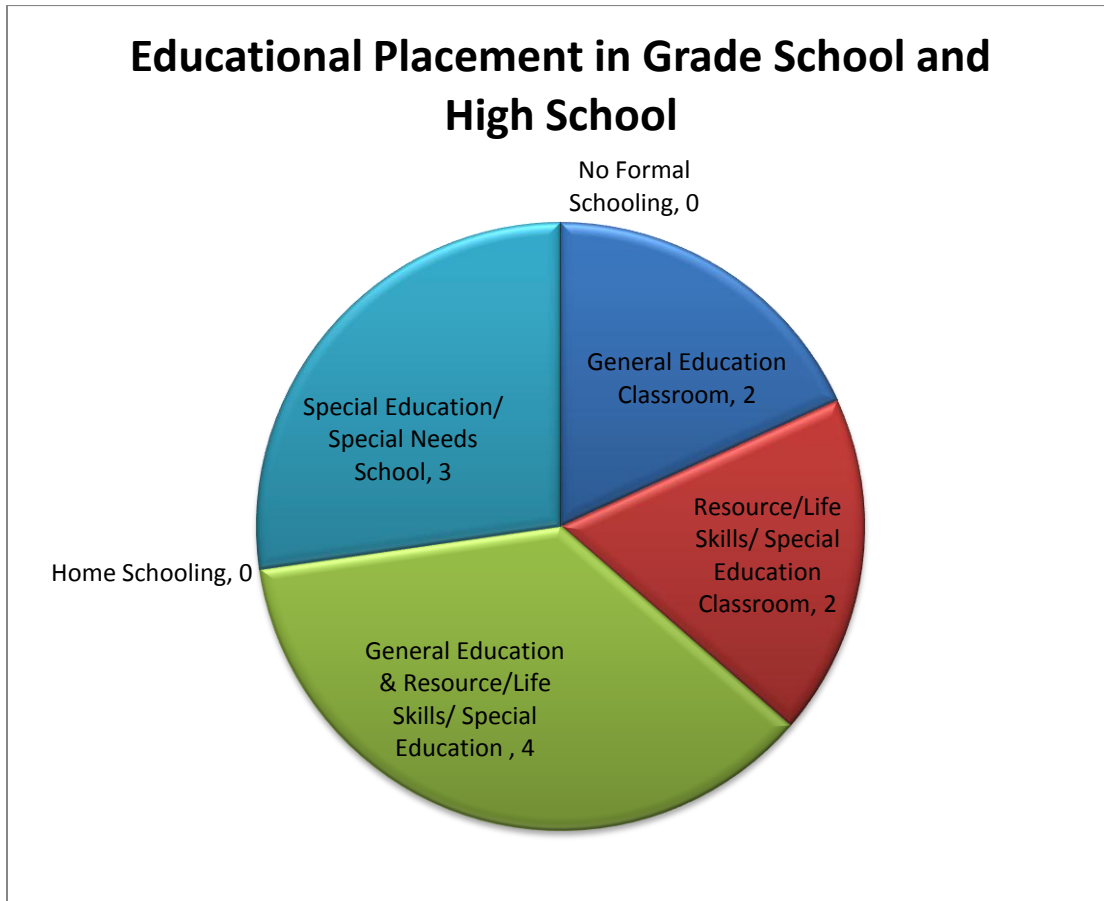
Figure 3



Eleven participants answered questions regarding education and schooling. Eight participants completed high school; and three participants earned a masters or doctorate degree. When asked to describe their education placement in grade school and high school, two people reported being in the general education classroom, two reported being in a resource/life skills/special education classroom, four reported being in both general education and

resource/life skills/special education classrooms, and three reported attending special needs/special education schools (see Figure 4).

Figure 4



Ten participants offered information about their living situation. Four reported living with their parents or primary care taker, two live with 24-hour support from care assistants, two participants live independently with part-time care assistants, and two live independently. One participant reported I "rent my own home with live in house mate that shares rent" and another person reported living with their spouse and daughter.

AAC Systems and Use

Of the twelve participants, five used speech-generating devices (SGDs) from the DynaVox provider. Three used the DynaVox Maestro, one used the DynaVox Vmax+, and one participant did not offer information about their DynaVox model. The Maestro and Vmax+ have similar software and layouts, they both use the DynaVox InterAACt language framework. The Vmax+, however, is larger (12.5"w x 10"h x 3"d) and heavier (6 lbs. 5oz.) than the Maestro (10.625"w x 8.5"h x 1.875"d, and 2.75 lbs. or 3.44 lbs. depending on battery). The Vmax+ is commonly used for people who require a large screen display, need eye tracking to access their device, and want a device that can be mounted to a wheelchair. The Maestro is used when people want a more portable device.

Five participants used SGDs from Prentke Romich Company (PRC) provider. PRC devices included ECO with Unity 144, ECO2, Pathfinder, Pathfinder II, and Accent 1000. All five devices come with Unity®, the PRC language system. The Accent 1000 is smaller and more portable than the ECO. The Accent 1000 is 12"w x 7.5"h x 1.5"d and weighs 2.95 lbs. The ECO with Unity 144 is 13.2"w x 11.2"h x 2.9"d and weighs 16 lbs. 13 oz.

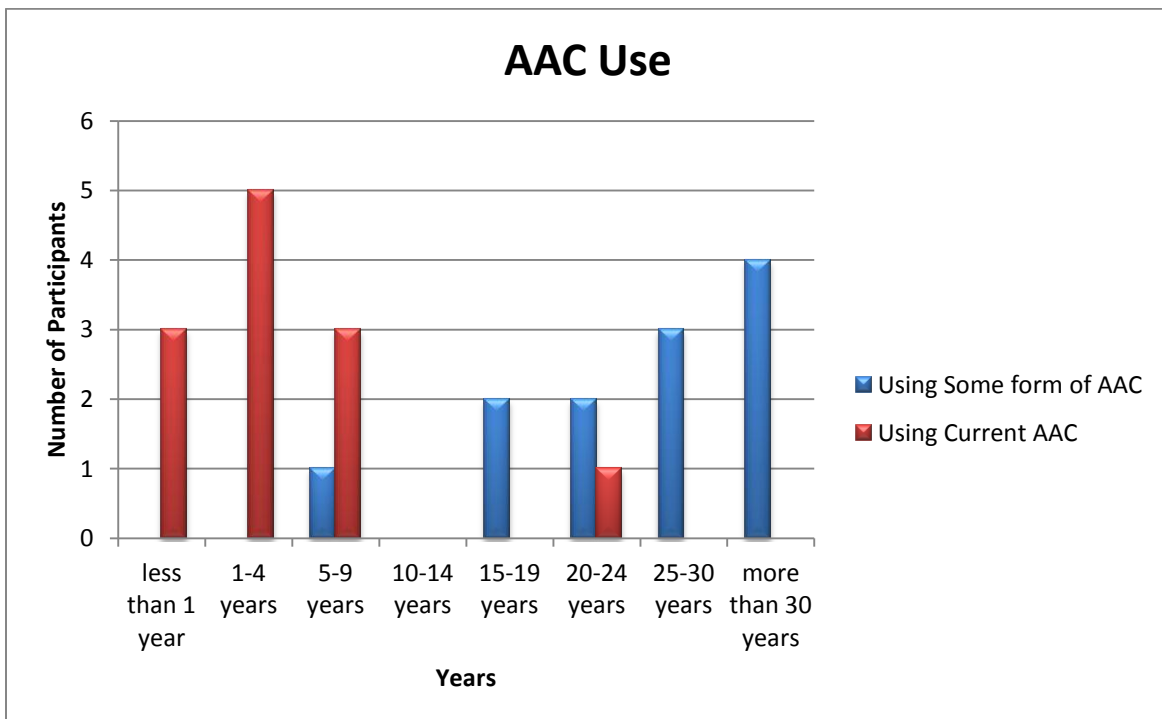
One participant reported using EZ Keys and iPad applications. EZ Keys is a text-based communication and computer access package. This program was created by words+ and is used on Windows. EZ Keys allows people to access a computer through a keyboard or a switch (finger, mouth, foot, etc.). Once the person writes their message using EZ Keys, they can send the message to a text-to-speech program that will read the message aloud. The participant did not specify which iPad applications they use.

One participant used many forms of AAC, such as American Sign Language (ASL) and high-tech devices to communicate. They described their communication by saying:

" I use a variety of modes to communicate including emails, instant messengers, online collaboration tools, webinars, basic american sign language, a smartphone, a laptop, a tablet, a palmtop and a smart watch, which can be wrist mounted for rendering text-to-speech while conducting training sessions for my staff or delivering highly effective audio-visual presentations in-person."

When asked how many years they had been using AAC, one participant reported using AAC for 5-9 years and the rest of the participants reported using some form of AAC for 15 years or more. However, the majority of participants reported using their current AAC system for 4 years or less (see Figure 5).

Figure 5



Eleven participants answered questions regarding use of communication system in the workplace. Frequency of communication system use at work was measured using a Likert scale, where 1 is never and 5 is all the time. Three participants rated their use of AAC at work as a 2, one rated their use at 4, and seven rated their use at 5. The average rating was 4.09. Participants reported using their communication systems to complete work-specific tasks such as making phone calls, sending emails, and communicating with customers (8 participants), to socialize with coworkers (6 participants), to repair communication breakdowns (1 participant), and to give presentations and answer questions (2 participants).

The Job-Search Process

Participants reported hearing about/finding their jobs through job postings or advertisements online (2 participants), referral from an employee (3 participants), referral from an outside contact (2 participants), college recruiting (1 participant), volunteering (3 participants), and "word of mouth" (4 participants). When asked to select services that were helpful during the job search process, 5 participants reported networking in person was helpful. Three participants reported using a job coach, two participants said searching online was beneficial, one person reported using the Office of Vocational Rehabilitation (OVR), and one person stated that social media networking was helpful while job-searching. However, four participants reported that none of the previously mentioned services were helpful while job-searching.

When asked about the interview process for their current job; 7 participants reported that they did not have an interview and 5 participants did. All 5 participants who had interviews had face-to-face interviews; 2 also had phone interviews, 2 had email interviews, and 2 had

Skype/computer chat room interviews. None of the participants were given interview questions in advance.

Job Training

Five participants were offered on-the-job training when they began working. Participants' training varied from standard orientation procedures to one-on-one job coaching. The majority of participants' training (66.67%) lasted less than a week to four weeks. However, two participants reported that their training lasted over a year.

Barriers to Employment

Four participants described incidents of discrimination that they experienced while searching for employment. One participant encountered discrimination solely because of their communication device; "I was told by one employer that I was the best qualified person, but my communication device was the reason they couldn't hire me." Another participant explained intolerance towards people with communication disorders; "[I] can't describe specific incidents but you just know from the looks/body movement when they realize I have a speech disability." Another participant's job developer explained that some employers would not consider them a "viable applicant" due to their disability. Lastly, when asked whether they experienced discrimination while searching for jobs, one participant replied: "Absolutely. That is why owning my business is a perfect fit for me."

Participants also described educational barriers. Seventy percent of respondents stated that the knowledge and skills they learned in school did *not* help prepare them for their current job. When asked why, two participants explained that their job is different than anything they covered in school: "I'm doing something different than my major and masters." and "I didn't take

dance or art [in school]." Other participants described schools that were unable to meet their behavioral and/or communication needs; "They did not know what to do with me in school. I was continuously escaping!" and "I didn't use technology in school. I only had manual communication boards and no computers." Another participant stated that there were "too many kids" for them to focus and learn properly. Another participant described inadequate support for transitioning from high-school to post-secondary education and the job market: "I feel that they could have done a better job at preparing me to work with vocational rehab, college/technical school and attaining employment. I would have loved to be taught how to formulate a question to better serve me."

When asked where they learned the knowledge and skills they use at work, only three participants said at school. Participants reported learning knowledge and skills through other outlets such as on-the-job training (6 participants), parents or care-takers (4 participants), occupation specialists (1 participants), speech therapists (1 participant), a nonprofit charitable organization for advocacy for people with disabilities (1 participant), and self-learned (1 participant).

Participants also noted barriers they encountered at work due to their AAC system. Five out of 11 respondents (45.45%) said limited battery life of their device was a barrier at work. Four participants (36.36%) said that slowed rate of communication impedes their performance at work. Four people (36.36%) reported that their devices' cumbersome equipment limits mobility. Two participants (18.18%) stated that monotone or unnatural voice output is a drawback of using AAC. One participant said their biggest challenge at work was "getting people to understand me over the telephone." One participant (9.09%) said that limited vocabulary on their device is an obstacle while communicating on the job. Another participant explained that their job requires

them to get their hands dirty and to be around hot machines. This is an issue because it is not good for most devices to be around extremely hot surfaces or to be used with dirty hands.

Lack of employer knowledge about AAC may cause a barrier for employees who use AAC. When asked to rate their employers' knowledge about AAC on a scale of 1 to 5 where 1 is "NOT knowledgeable" and 5 is "VERY knowledgeable"; three participants rated their employers' AAC knowledge as a 1, one participant rated their employer's knowledge as a 2, three participants rated employer knowledge as a 4, and four participants rated employer knowledge as a 5. The average rating of employer knowledge was 3.36.

Interacting with coworkers who are unfamiliar with AAC can be difficult for adults who use AAC. When asked to rate their coworkers' knowledge on AAC on the same scale, where 1 is "NOT knowledgeable" and 5 is "VERY knowledgeable"; two participants rated their coworkers' AAC knowledge as a 1, three participants rated their coworkers' knowledge as a 2, two participants rated their coworkers' knowledge as a 3, two participants rated their coworkers' knowledge as a 4, and two participants rated coworker knowledge as a 5. The average rating of coworker knowledge was 2.91.

Participants also described transportation barriers, difficulty finding the right amount of work hours, and difficulty finding enough support at work. One participant stated that their biggest challenge at work was "finding drivers to take me everywhere that I have to go." Another said their biggest challenge was "getting enough work." One participant explained the trouble of balancing employment while also trying to keep their benefits:

"It is almost impossible for a person with a communication disability to find full time employment. That's the frustrating part because without full time employment you are

trying to work just enough to make some money, but not enough to lose your benefits.
That's the most difficult thing."

A mother described difficulty getting enough support for her son when she wrote:

"It is very sad there is NOT a full time expert in the [SGD provider] training that could support [my son], family and workers on a continuous basis. [Where my son receives therapy] is awesome, but [he] gets a new person each semester! Progress can be painfully slow."

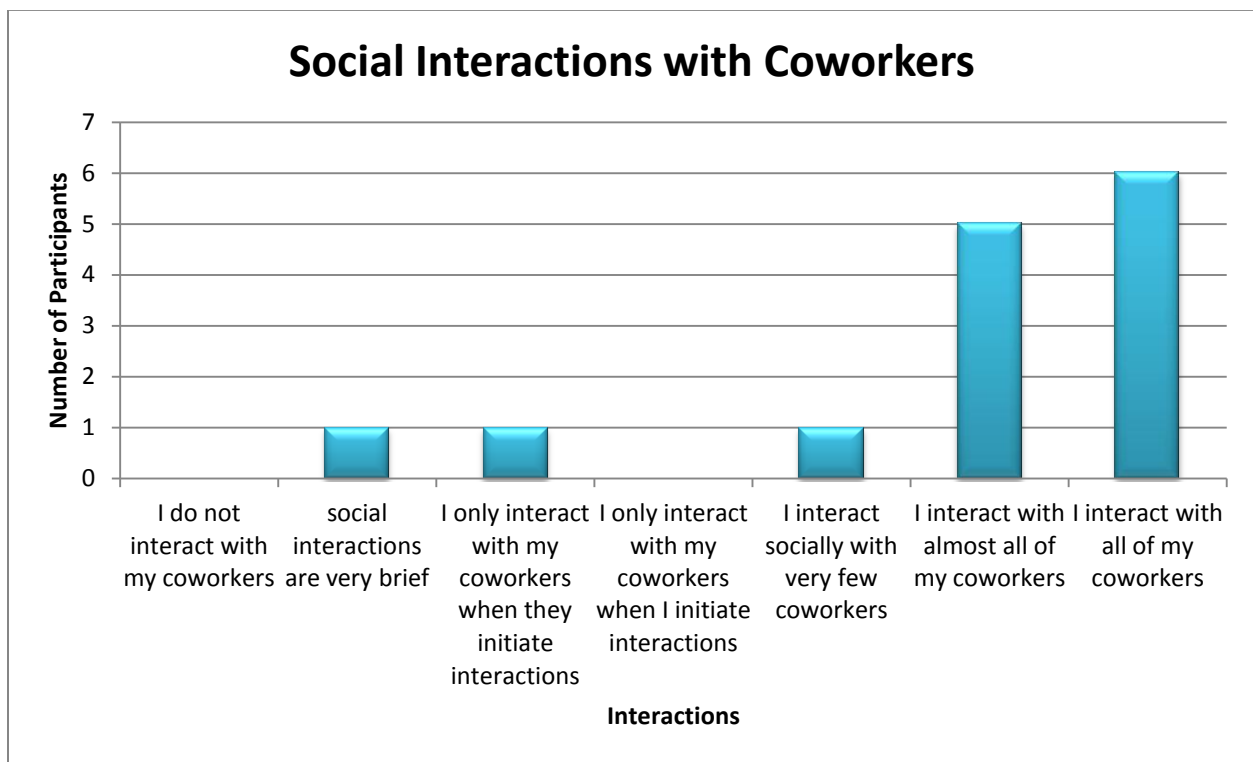
Lack of job training can also be a barrier in the workplace. Over half (58.33%) of the participants were not offered on-the-job training when they started working. According to the survey, 41.67% of participants felt they would have benefitted from more job training.

Previous research has shown that negative societal attitudes and discrimination from coworkers is a prominent barrier for employees who use AAC (McNaughton & Arnold, 2010; McNaughton, Light, & Groszyk, 2001). However, the individuals from this study seem to have built good relations with their coworkers, resulting in positive work environments. When asked if they had ever experienced discrimination or negative societal attitudes from coworkers, only one out of ten respondents answered yes. When asked to rate comfort level while interacting with their coworkers, where 1 is "I feel very uncomfortable interacting with my coworkers" and 5 is "I feel very comfortable interacting with my coworkers", all respondents rated interactions at a 4 or 5 (average rating of 4.73).

The majority of respondents appear to interact with many of their coworkers and feel included in the work setting. When asked to rate social inclusion at work, where 1 is "I feel isolated at work" and 5 is "I feel like I am part of the team", one participant reported feeling

isolated with a score of 1, one participant rated their inclusion as a 3, and nine participants (81.82%) reported feeling part of the team with a score of 5. The average rating was 4.45. The majority of participants (54.55%) stated that they interact with all of their coworkers. However some participants reported that social interactions with coworkers are very brief and some reported only interacting when their coworkers initiate the interaction (see Figure 6).

Figure 6

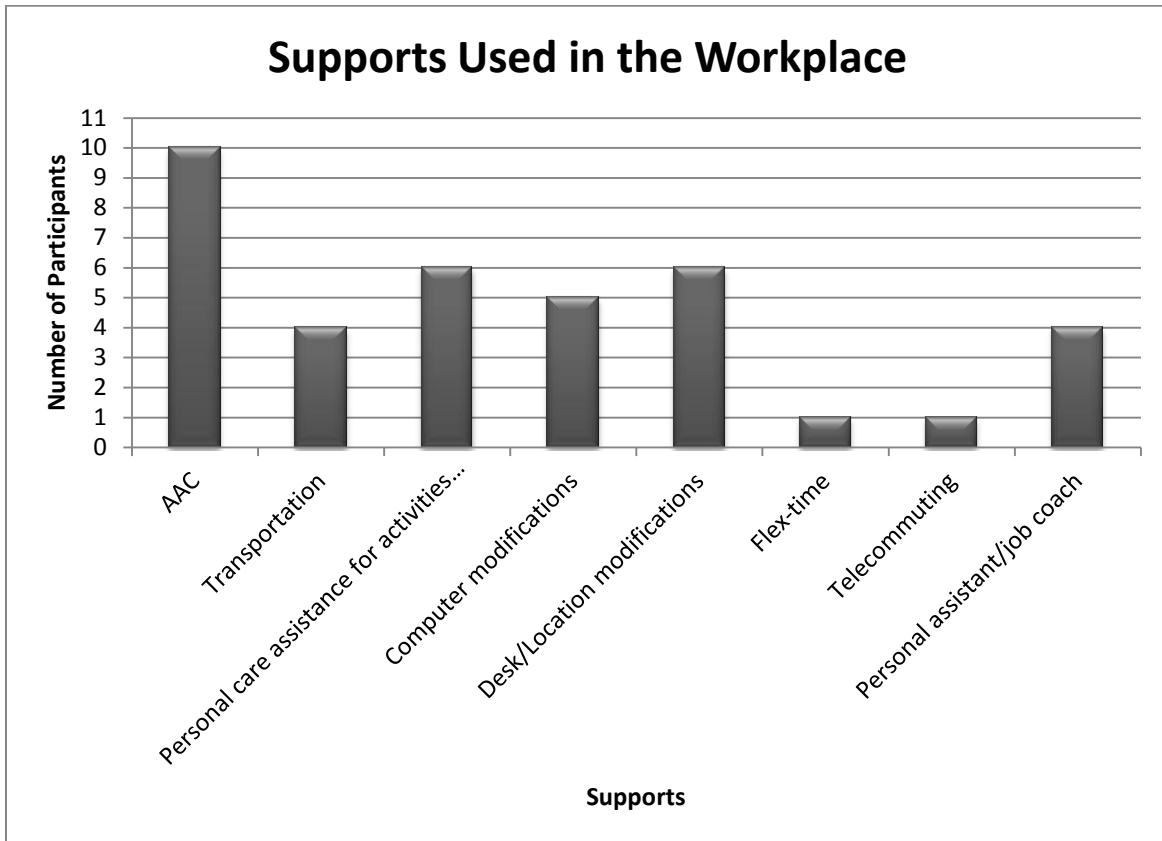


Supports in the Workplace

Eleven participants answered questions regarding supports they use in the workplace. These participants reported using AAC, transportation, personal care assistants for activities of daily living, computer modifications, desk/location modifications, flex time, telecommuting, and personal assistant/job coach who helps complete work-related tasks (see figure 7). One

participant noted that they get a "chance to leave [my] work station and engage in more active tasks when necessary." When asked "Are there any accommodations at work that you would like that are not currently provided?" all respondents answered no.

Figure 7



Comments about Employment and Advice for Job-Searchers

Ten participants answered questions about job satisfaction. All ten reported that they are satisfied or are very satisfied with their jobs. There were three common themes that occurred when participants wrote about the importance of having a job: income, gaining a feeling of purpose, and having something to do. Participants explained: "I think it makes you a part of something bigger, which helps give you a purpose." and "Respect of others. Contributing.

Feeling valued." Others spoke mainly about having something to do with their time: "getting out of the house," "having somewhere to go," and "not doing the same thing every day." Some participants discussed the financial benefits of employment; and having help "dealing with budgetary constraints." One participant summed it up by quoting Voltaire; "Work banishes those three great evils: boredom, vice, and poverty."

When asked what they liked about their job, many participants spoke of helping people and interacting socially with people. Participants wrote: "friends," "social interaction with co-workers and customers," and "teaching other people and helping other people." Other participants mentioned having "ownership" in their work and being interested in their specific field of work. One participant said they enjoy experiencing "the diversity in work."

Participants were asked to rank the following 9 skills in order of importance for their job, where 1 is the most important and 9 is the least important: math skills, literacy skills, communication skills, time management skills/meeting schedules or deadlines, problem-solving skills, technology skills, social skills, physical skills, and travel skills/ability to travel. The majority of participants (54.55%) reported that communication skills are the most important skills for their jobs (see Figure 8 and Figure 9).

Figure 8

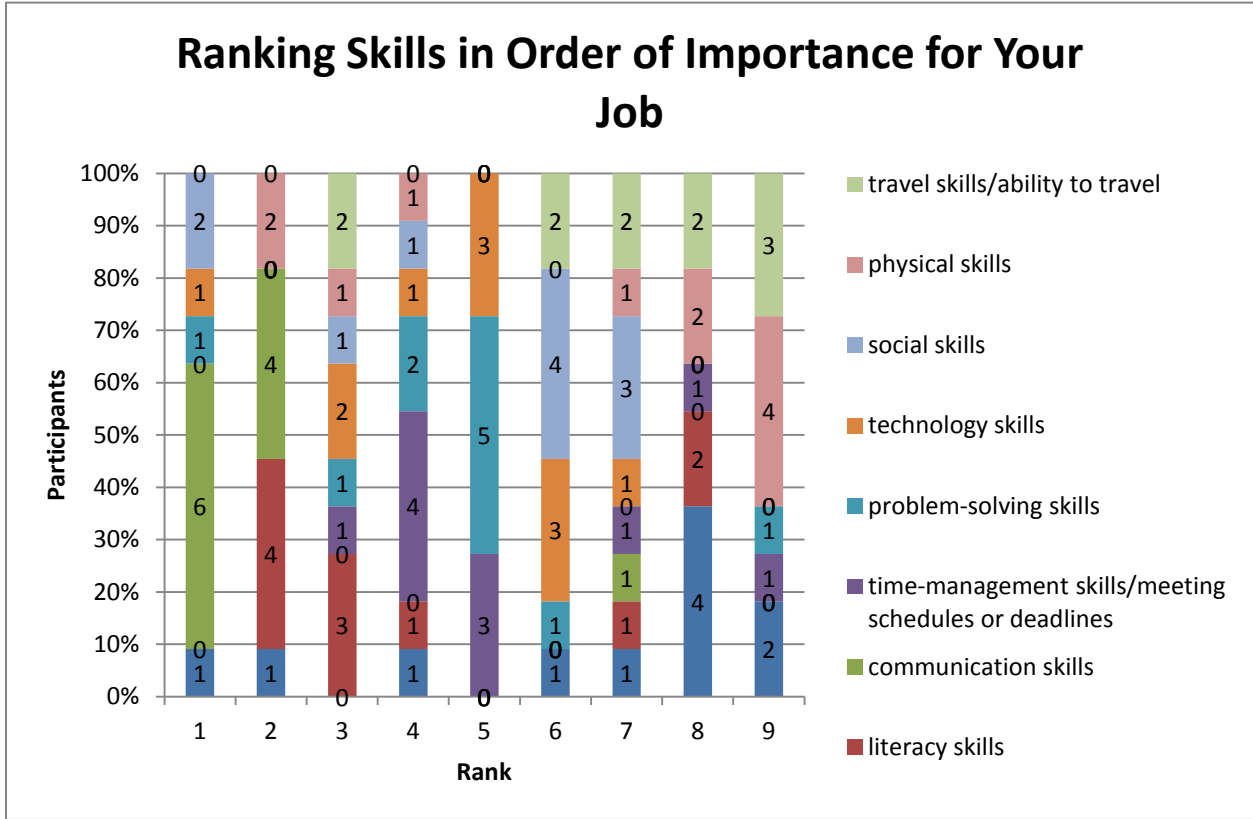
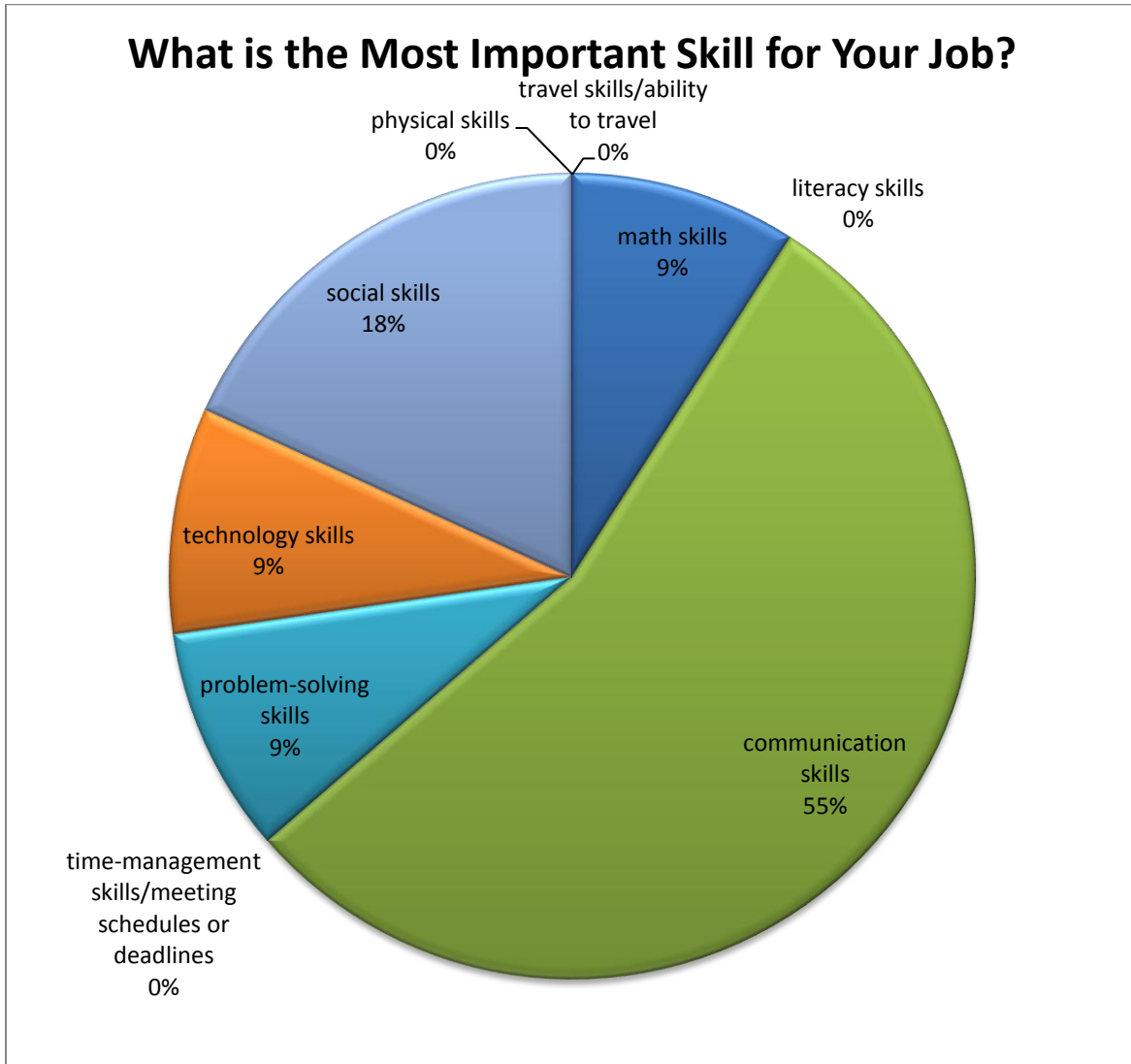


Figure 9



Participants were asked what advice they would give to a person who uses AAC and is searching for a job. The overwhelming majority of participants would tell the individual not to give up. Participants responded; "You have to keep pushing and pursuing you dreams! You can't stop after the first no.", "Never Give Up!", "Don't be ashamed to use your voice.", and "Patience."

Chapter 4: Discussion

This study examined employment experiences of adults who use AAC. The researcher specifically looked at demographics of the participants, AAC systems used by individuals who are employed, the job-search process, job training, barriers to employment, and supports used in the workplace.

This study provides descriptive data about the twelve adults who participated in the survey. Due to the small sample size, the findings reported in this study cannot be generalized to the entire population. However, these respondents offered useful insight on ways to lessen employment barriers and increase supports for individuals who use AAC.

Question 1: Demographics

The participants in this study were diverse in regards to age, occupation, salary, and diagnosis. However, it is notable that eight of the twelve participants (66.67%) had a diagnosis of cerebral palsy. Cerebral palsy is a group of non-progressive disorders involving brain and nervous system functioning and permanently affect muscle coordination and body movement. People with cerebral palsy often have dysarthria, a motor-speech disorder where muscles of the mouth, face, and respiratory system are weak and move slowly. People with cerebral palsy often have speech, but it may be difficult to understand. AAC can help this population communicate more effectively.

Occupations varied from Grocery Store Bagger to Entrepreneur to Biomedical Researcher to Freelance Writer. However, interestingly, four of the eleven respondents (36.36%) worked in some form with AAC. These individuals were consumer representatives and troubleshooters for their AAC manufacturing companies, AAC educators in schools, and a public

speaker on AAC. This information is useful for people who use AAC and are searching for employment opportunities. Look into job opportunities with AAC providers or find opportunities to mentor and coach other individuals who use AAC. AAC providers benefit from hiring their consumers, because the consumers offer first-hand knowledge and experience. Since technological innovations for AAC are on the horizon, this may be a growing employment niche for people who use AAC.

The educational preparation of survey respondents is noteworthy. All eleven respondents completed high school and three earned master's or doctorate degrees. Which reflects on average a higher level of educational attainment than reported in previous literature (Hamm & Mirenda, 2006). This speaks to the importance of education on employment outcomes. Well-educated individuals have higher employment rates and less-educated individuals have higher unemployment rates (Wolbers, 2000). Young adults with disabilities are more likely to drop out of school and experience chronic unemployment and poverty than their non-disabled peers (Hamm & Mirenda, 2006). It is vital for individuals who use AAC and for individuals with disabilities to stay in school and learn the skills necessary for gainful employment. This study supports the claim that education positively impacts employment rates.

Question 2: What AAC systems are most commonly used in the workplace?

Of the twelve participants, five used SGDs from the DynaVox provider and five used SGDs from the Prentke Romich Company. It is not surprising that the majority of participants used DynaVox and PRC devices, since these are two of the leading SGD providers. Due to participants' varied job-related tasks and responsibilities, it is safe to deduce that PRC and DynaVox devices are effective communication systems for many work environments. It is also

possible that Medicaid and Medicare are more likely to fund DynaVox and PRC devices than other SGDs. Also, this survey was distributed through a PRC listserv, which may have skewed the data towards PRC devices.

Of the remaining two participants, one used EZ Keys and iPad applications, and the other used a combination of ASL and high-tech devices such as computers, a smartphone, and a smart watch. It is important to recognize that AAC is comprehensively defined and includes everything that augments communication. Even things like email, hand gestures, and instant messaging are modes of AAC. Professionals, such as speech-language pathologists, who consult and advise individuals about AAC should be aware of all forms of AAC. Individuals who use AAC and are looking for employment can mention in interviews that they can use common office equipment such as email, instant messaging, webinars, phones, computers, and electronic tablets to support their communication. Individuals who use AAC should describe how their use of technology broadens their skill set and will benefit the company they want to work for.

Question 3: What is the job-search process like for individuals who use AAC?

According to Bryen, Potts, and Carey, hearing about job opportunities is one of the most important steps in finding a job; yet little is known about how job candidates who use AAC become aware of employment opportunities or how employers become aware of them (2007). Participants from this study reported hearing about their jobs by "word of mouth", referrals from employees, volunteering, referrals from an outside contact, advertisements online, and college recruiting. Participants in this study found that networking in person was the most helpful tool during the job-search process. Only one participant said the Office of Vocational Rehabilitation (OVR) helped them find a job.

Participants who underwent job interviews (5 participants, 41.67%) were not allowed to see interview questions in advance and prepare responses. These five participants all had face-to-face interviews and some had face-to-face interviews along with phone, Skype/internet chatroom, and email interviews. If an interviewer does not allow job candidates to see interview questions in advance, individuals who use AAC should prepare for interviews by researching commonly asked interview questions and researching the company they are applying for; as is common practice of successful job applicants in any employment market. Job candidates should locate necessary vocabulary in their device and be prepared to discuss these topics.

Question 4: What type and extent of job training is provided to individuals who use AAC?

The majority of participants were not offered training when they started work. The participants who did receive training described it as short, very general and basic orientation. The exception was two participants who trained for over one year. As a whole this sample of individuals did not receive much on-the-job training.

Question 5: What are common barriers to employment for individuals who use AAC?

Participants described many barriers that affected their ability to gain employment and to effectively engage in employment tasks. These barriers include educational barriers, AAC system barriers, job-finding barriers, job-training barriers, negative societal attitudes, funding and benefits barriers, and transportation barriers.

As mentioned earlier, a completed formal education is often a prerequisite for employment consideration. Children and young adults attend school so they can learn the knowledge and skills necessary to succeed in the workforce. However, 70% of participants in this study said their schooling did not help prepare them for their job. Participants described

school systems that did not cater to their specific needs. One participant was not offered an appropriate communication device, so they were unable to communicate effectively or to their fullest potential. Another participant attended a school that could not support their behavioral/sensory needs, so they spent time "escaping" instead of learning. Others mentioned simply not covering material in school that they use constantly in their job. Schools should provide curriculum that that will prepare students for future employment. Figure 9 shows skills that participants feel are crucial for job success.

Although AAC facilitates communication and social interactions, large high-tech devices do have some limitations. The top two AAC-related barriers, mentioned by participants, are limited battery life and slowed rate of communication. One participant said the most difficult part of their job is getting people to understand them over the phone. As engineering and technology advance, these problems will most likely subside. In the mean time, professionals such as speech-language pathologists and device providers and consultants must educate clients on strategies to prevent and repair communication breakdowns. For example, individuals can preset a message on their device that says "Hi, my name is Kristen and I use a computer to talk. Sometimes it takes me a bit longer to say things so please be patient. Tell me if you can't understand something I say."

Many participants stated how difficult it is for individuals who use AAC to find employment. Resources such as the Office of Vocational Rehabilitation (OVR) are available to help individuals with disabilities find work. However, only one participant stated that the OVR was helpful while they were job-searching. Difficulty finding a job may stem from inadequate job-finding resources, difficulty networking, or it could be a result of other barriers such as lack of appropriate education and negative societal attitudes.

Lack of job training or lack of adequate job training was a barrier for 41.67% of participants. Appropriate intensity and duration of training varies from job to job and person to person. Some employees who use AAC may benefit from extended training or from using different training approaches. Alternate or additional training approaches may include using more visuals, allowing extended time to ask and answer questions, and using multiple means of representation (e.g. verbally explaining an employees' responsibilities and also providing a written list of employees' responsibilities).

Participants provided examples of experiencing negative societal attitudes and discrimination due to their disability, AAC system, or both. Negative societal attitudes, such as the assumption that an individual who uses AAC will not be a competent employee, are a common theme throughout AAC research. These attitudes may stem from ignorance. Individuals who are unfamiliar with AAC are less likely to initiate interactions with people who use SGDs. More research and advocacy will help spread awareness and breakdown negative societal attitudes towards people who use AAC.

In a recent study on employers' and coworkers' perspectives on working with people who use AAC, employers mentioned challenges due to unwillingness of coworkers to socialize with their colleagues who relied on AAC (McNaughton, Light, & Gulla, 2003). According to this survey, this concern seems unsupported. 90% of participants on this study reported they had never experienced negative societal attitudes from their coworkers and all participants reported feeling comfortable interacting with their coworkers. This shows that individuals who use AAC are able to "fit in" and be contributing members of the work team.

Question 6: What are helpful supports in the workplace?

It is important for individuals who use AAC and for their employers to be aware of modifications and accommodations that can support efficiency in the workplace. Participants in this study used a range of supports at work; i.e. AAC, transportation, personal care assistants for activities of daily living, computer modifications, desk/location modifications, flex time, telecommuting, and personal assistant/job coach who helps complete work-related tasks. One participant talked about taking breaks during the work day and doing something active. It is important for employers and employees to work together to figure out what modifications, accommodations, and supports meet their individual needs. Job candidates who use AAC should educate potential future employers on specific supports they may require and explain how these supports would benefit their productivity. Individuals who are currently employed and feel like they are not getting adequate support should use this information to request and advocate for services.

Limitations

Several limitations should be considered when interpreting the results of this study. First, because of the small number of participants, the findings may not be generalizable to the larger population of employed adults who use AAC. In order to complete the survey, participants required access to a computer and literacy skills, or support from someone. Individuals who are employed and who use AAC but did not have access to a computer, literacy skills, or support were not investigated in this study. Finally, this study was sent through a Prentke Romich listserv, so data regarding device provider may over represent users of those devices.

Future Research

Due to the exploratory nature of this study and the lack of research regarding AAC and employment, there are several areas for future research, which might facilitate positive employment experiences and increase employment rates for this target population. First, increasing the sample size of this study would provide more thorough and generalizable findings. Second, examining the experiences of unemployed adults who use AAC and are searching for employment might offer a broader view of employment barriers and necessary supports. Third, studies examining experiences of employers, coworkers, educators, job coaches, and vocational counselors who work with individuals who use AAC will provide a different perspective and more knowledge of barriers and supports to employment. Lastly, there is a strong need for exploration of interventions designed to lessen barriers and increase supports in the workplace.

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Employment for Adults who use AAC

The Department of Speech-Language-Hearing: Sciences & Disorders at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

We are conducting this study to better understand employment experiences for individuals who use augmentative and alternative communication (AAC). This will entail your completion of a survey. Your participation is expected to take approximately 15-50 minutes to complete. The content of the survey should cause no more discomfort than you would experience in your everyday life.

Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of supports that can be used in the workplace for individuals who use AAC. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. Your identifiable information will not be shared. No names or participation numbers will be linked to survey submissions. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail.

Completion of the survey indicates your willingness to take part in this study and that you are at least 18 years old. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email irb@ku.edu.

Sincerely,

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1. Please identify your age.

- 18-22
- 23-29
- 30-39
- 40-49
- 50-59
- 60-65

**2. What AAC system do you use?
Please include make and model.**

**3. What condition is associated with
your need for AAC?**

4. How many years have you been using some form of AAC?

- less than 1 year
- 1-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25-30 years
- more than 30 years

5. How many years have you been using your current AAC system?

- less than 1 year
- 1-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25-30 years
- more than 30 years

6. How much training have you had with your AAC system? (for example speech therapy or training from a company representative)

- no training
- less than 1 hour
- 1-9 hours
- 10-19 hours
- 20-29 hours
- 30-39 hours
- 40-50 hours
- more than 50 hours

7. What is your job title?

8. Who is your employer?

9. How did you find your job? / How did you hear about this employment opportunity? (select all that apply)

- job posting or advertisement in person
- job posting or advertisement online
- employment agency referral
- referral from an employee
- referral from an outside contact
- college recruiting
- client referral
- volunteering
- "word of mouth"
- other

Other (please specify)

10. Were you offered on-the-job training when you started working?

- yes
- no

11. If yes, please describe the training you received.

12. How long did you undergo job training?

- less than 1 week
- 1-4 weeks
- 1-3 months
- 4-6 months
- 7-9 months
- 10-12 months
- more than 1 year

13. Do you feel you would benefit from more job training?

- yes
- no

14. How long have you been working with your current employer?

- less than 5 months
- 5-11 months
- 1-4 years
- 5-9 years
- 10-14 years
- 15-20 years
- more than 20 years

15. Which of these services were helpful while you were job searching? (select all that apply)

- job coach
- Office of Vocational Rehab (OVR)
- social media networking
- searching online
- networking in person
- none of the above

16. Please describe your interview process for your current job. (select all that apply)

- face-to-face interview
- phone interview
- email interview
- Skype / Computer chat room interview
- no interview

17. Were you given interview questions in advance?

- yes
- no
- I did not have an interview

18. Did you experience any discrimination or negative societal attitudes when searching for employment?

- yes
- no

19. If yes, please describe the incident/s.

20. Are you a permanent, temporary, or seasonal employee?

- permanent
- temporary
- seasonal

21. How many hours a week do you work?

- less than 5 hours
- 5-10 hours
- 11-20 hours
- 21-30 hours
- 31-40 hours
- more than 40 hours

22. Are you satisfied with your work hours?

- yes
- no, I would like to work more hours
- no, I would like to work fewer hours

23. Are you on salary or do you make hourly wages?

- salary
- hourly
- not applicable

24. If you make hourly wages, please identify the category that best reflects your hourly wages.

- less than \$3.25 per hour
- \$3.25-\$5.24 per hour
- \$5.25-\$7.24 per hour
- \$7.25 per hour
- \$7.25- \$10.25 per hour
- \$10.26-\$13.25 per hour
- \$13.26-\$16.25 per hour
- \$16.26-\$19.25 per hour
- more than \$19.25 per hour

25. Do you feel you receive adequate compensation for your work?

I feel my compensation is very inadequate.	I feel my compensation is inadequate.	I feel my compensation is adequate.	I feel my compensation is very adequate.
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<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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26. Do you receive financial support from areas outside of work?

- yes
- no

27. If yes, please describe. (select all that apply)

- parents or primary caretakers
- spouse
- Medicaid
- Medicare
- Income Support
- Disability insurance payments (Disability Premiums)
- Working Tax Credit
- Other (please specify)

28. On a scale of 1-5, where 1 is never and 5 is all the time, how often do you use your communication system at work?

1 (never)	2	3	4	5 (all the time)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

29. How do you use your communication system at work? (select all that apply)

- I use it to complete work-specific tasks (phone calls, emails, communicating with customers)
- mainly to socialize with coworkers
- only when someone has trouble understanding me

Other (please specify)

30. What is your highest level of education?

- no formal schooling
- some grade school
- completed grade school
- high school
- General Education Development (GED) Certificate
- bachelor's degree
- associate's degree
- master's degree or doctorate
- technical school

31. Please describe your education placement in grade school through high school. (select all that apply)

- general education classroom
- resource / life skills / special education classroom
- both general education and resource / life skills / special education classrooms
- home schooling
- special education / special needs school
- no formal schooling

32. Do you feel that the knowledge and skills you learned in school helped prepare you for your current job?

- yes
- no

33. Why or why not?

34. Where did you learn the knowledge and skills that you use at work? (select all that apply)

- school
- on-the-job training
- occupation specialist
- parents or care-takers

Other (please specify)

35. On a scale of 1-5 how satisfied are you with your job?

1 (very unsatisfied)	2	3	4	5 (very satisfied)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36. What is your biggest challenge at work?

**37. What supports do you use at work?
(select all that apply)**

- augmentative and alternative communication (AAC)
 - transportation
 - personal care assistance for activities of daily living
 - computer modifications
 - desk/location modifications
 - flex-time
 - telecommuting
 - personal assistant / job coach who helps complete work-related tasks
- Other (please specify)

38. Are there any accommodations at work that you would like that are not currently provided?

- yes
- no

39. If yes, please explain.

40. Select any of the following barriers that you may have encountered while using your AAC system at work.

- limited vocabulary
 - slowed rate of communication
 - monotone or unnatural voice output
 - limited battery life
 - cumbersome equipment that limits mobility
 - none of the above
- Other (please specify)

41. On a scale of 1-5, where 1 is NOT knowledgeable and 5 is VERY knowledgeable, how would you rate your employer's knowledge of AAC?

1 (NOT knowledgeable) 2 3 4 5 (VERY knowledgeable)

42. On a scale of 1-5, where 1 is NOT knowledgeable and 5 is VERY knowledgeable, how would you rate your coworkers' knowledge of AAC?

1 (NOT knowledgeable) 2 3 4 5 (VERY knowledgeable)

43. On a scale of 1-5, where 1 is very uncomfortable and 5 is very comfortable, how comfortable do you feel when interacting with your coworkers?

1 (very uncomfortable) 2 3 4 5 (very comfortable)

44. Have you experienced discrimination or negative societal attitudes from coworkers?

- yes
- no

45. If yes, please describe.

46. How would you describe your social interactions at work? (select all that apply)

- I do not interact with my coworkers
- social interactions are very brief
- I only interact with my coworkers when they initiate interactions
- I only interact with my coworkers when I initiate interactions
- I interact socially with very few coworkers
- I interact with almost all of my coworkers
- I interact with all of my coworkers

47. On a scale of 1-5, where 1 is "I feel isolated at work." and 5 is "I feel like I am part of the team at work.", how would you rank your social inclusion at work?

1 (I feel isolated at work.)	2	3	4	5 (I feel like I am part of the team.)
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

48. Rank the following 9 skills in order of importance for your job, with 1 being the most important and 9 being the least important.

<input type="text"/> math skills
<input type="text"/> literacy skills
<input type="text"/> communication skills
<input type="text"/> time-management skills/meeting schedules or deadlines
<input type="text"/> problem-solving skills
<input type="text"/> technology skills
<input type="text"/> social skills
<input type="text"/> physical skills
<input type="text"/> travel skills/ability to travel

49. Please describe your current living situation.

- independent
 - independently with part-time care assistants
 - group home
 - with parents or primary care taker
 - with 24 hour support from care assistants
- Other (please specify)

50. What is your favorite part about your job?

51. What do you like the most about having a job?

52. What advice would you give to a person who uses AAC and is searching for a job?

53. Did you have support in completing this survey?

- yes
 no

54. Is there anything else you would like us to know about AAC and employment?

Done