PREPARING ADULTS WITH AUTISM SPECTRUM DISORDERS FOR EMPLOYMENT

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Introduction

Whether you read the newspaper, watch the nightly news, or talk to a friend/family member, you are likely to learn that another American child has been diagnosed with Autism Spectrum Disorders (ASD). In 2009, the Centers of Disease Control (CDC) reported that the prevalence of American children with ASD continued to increase (Pratt, 2013). In 2008, a CDC report estimated an increase of 78% among 8-year-olds with ASD when compared with data from 2002 (6.4 per 1,000 in 2002 to 11.4 per 1.000 in 2008). Children who were 8-year-olds in 2002 are 19-year-olds today, and many of them are seeking employment. Since challenges with ASD persist throughout an individual's lifetime (Nesbitt, 2000), it is unclear how the labor force will respond to the influx of adults with this disability.

There is a significant amount of literature about the needs of children with ASD including attitudes of parents, instructional strategies, and special programs for school-age children, but little literature exists about the needs and issues of adults with ASD (Diament, 2012). Children with ASD who grow to adulthood will need some form of training to prepare for employment. This study used semi-structured interviews with adults diagnosed with ASD to explore technology use and employment preparation. The findings should be considered by institutions, educators, and prospective employers of adults with ASD.

Theoretical Framework

The theoretical framework for this argument is Constructivism – a learning theory based on inquiry, cognitive development, and discovery. Learning to a Constructivist is the development of insights within the mind of the learner. The learner builds mental constructs and representations that are uniquely aligned with his or her knowledge, perspectives, background, experiences, and abilities. Constructivists view learning as an active and interactive process that

depends on the manipulation of pertinent tools, ideas, and concepts. Learning is an active process that is highly visual and experiential; students explore, create, and demonstrate competence (Roblyer, & Doering, 2010). People learn by scaffolding new content to existing content, discovering new techniques, strategies, approaches, and software techniques, and refining their prior knowledge through hands-on experience (Merriam, Caffarella, & Baumgartner, 2007). Constructivism focuses on the ongoing, dynamic production of new structures (in the learner's mind) through communication and interaction between self and the environment. Interactions take place through sensory motor actions, and the learner's new structures are produced through intuition, inferences, culturally transmitted rules, and outcomes. Constructivism provides a very practical basis for studying training practices at an institute designed to teach video game design to adult learners with Autism.

The Goal of the Study

The purpose of this study was to explore the practices implemented at a technology institute for adults with ASD to determine strategies for employment, technology integration, and employment preparation. Seven learner perspectives (purposive sample) and two founder perspectives were documented and verified through semi-structured interviews.

The research questions were:

- What practices are effective for preparing adults with ASD for employment in the field of technology?

- What techniques for technology training can be used to prepare adults with ASD for jobs in video game design?

Literature Review

Autism is a spectrum of disorders including Autistic Disorder, Asperger Syndrome or Asperger's Disorder, and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS). A diagnosis of ASD indicates that an individual has a complex neurological disorder which impairs communication, behavior, and social interaction. Many adults with ASD are knowledgeable and skilled. However, they tend to be unemployed and underemployed because of difficulties interacting, communicating, and securing positions for which they are qualified (Chappel & Somers, 2010; Hendricks & Wehman, 2009; Nesbitt, 2000). A very small percentage of individuals with ASD are employed; Holwerda, van der Klink, Groothoff, & Brouwer (2012) indicate that only about 25% of individuals with ASD are employed. Other researchers confirm low rates of unemployment among persons with ASD (Chappel & Somers, 2010; Hendricks & Wehman, 2009; Nesbitt, 2000). Individuals with ASD have a lifelong struggle that often occurs with co-morbid conditions that require constant monitoring and medical care (i.e., anxiety disorders, ADHD/ADD, tics, OCD, depression, seizures/epilepsy, and other conditions) (Bregman, 2005). Without employment training and job opportunities for individuals with ASD, society pays the costs. The Autism Society of America (2014) estimates that the lifetime cost for caring for a child with ASD is between 3.5 to 5 million dollars, and the United States is facing annual costs of about 90 billion dollars for ASD. Well-paying employment for individuals with ASD can provide insurance benefits that lessen the financial cost of medication and visits to doctors, allow an individual with ASD to contribute to society through tax payments, and provide an opportunity for personal and professional fulfillment.

Creating and evaluating software and hardware, writing computer programs, and testing equipment can be autonomous, require little social interaction, and rely on an individual's

experience and technical skill. These jobs and others that are technology intensive can be a good

fit for adults with ASD. In addition, adults with ASD understand technology and excel at using

it (Moore, McGrath, & Thorpe, 2000; Oberleitner, Ball, Gillette, Naseef, & Stamm, 2006).

Inconsistent job histories, lack of career choices, lack of workplace diversity, and problems

interacting socially prevent many adults with ASD from thriving in the workplace (Schall &

McDonough, 2010; Taylor & Seltzer, 2011).

Literature suggests that organizations have concerns about employing workers with

disabilities (Parent & Everson, 1986). Taylor and Seltzer (2011) confirmed low rates of

employment for individuals with ASD, and several researchers have indicated

underemployment is common among individuals with ASD who are competitively employed

(Burke, Andersen, Bowen, Howard, & Allen, 2010; Hurlbutt & Chalmers, 2004). As reported

earlier, only 25% of adults with ASD are employed (Holwerda, van der Klink, Groothoff, &

Brouwer (2012)), while 69% of adults without disabilities in the USA are employed in either

full-time or part-time positions (Bureau of Labor Statistics, 2012).

Supported employment is a recommended practice for adults with ASD and other

disabilities, because it allows workers to receive training while they are on the job (Hendricks,

2010; Lattimore, & Parsons, 2006). Supported employment might include visual support which

clarifies procedures and tasks and provides reminders. It might also include an Augmentative or

Alternative Communication (AAC) system, a job coach, individualized training, positive

behavior support, social support to lessen anxiety and ensure success, or a combination of these

(Chappel & Somers, 2010; Foley & Staples, 2003; Hendricks, 2010; Schall, 2010). Research

from Applied Behavior Analysis provides a foundation for instructional strategies used in

employment settings: video modeling, errorless learning, prompts, guidance, feedback, behavior

management, and structured reward systems. Research describing instructional strategies for

teaching skills to adults and adolescents with ASD in the workplace is not plentiful (Hendricks,

2010), and studies utilizing technology in the workplace with this group are rare. Strickland,

Coles & Southern (2013) evaluated an intervention designed to use an online training program

to teach interview skills to 22 youth with ASD. The web-based intervention combined Theory

of Mind-based guidance, video modeling, visual supports, and virtual reality practice sessions

designed to improve interviewing skills. The treatment group improved content knowledge

rather than delivery skills. Participants provided more appropriate verbal responses to the

interview questions they were asked, but the features accompanying their responses (body

language – posture, eye contact, facial expressions) did not improve to the same degree. The

authors indicate that both delivery skills and content may require additional time or feedback

before the same degree of improvement is observed in both areas.

Allen, Burke, Howard, Wallace, Bowen (2012) used audio cuing technology to facilitate

community employment for adolescents with ASD and Intellectual Disabilities. Audio cues

were given to three participants in the study to help them accomplish job requirements. Three

participants received initial training with video modeling in a small n study which used an

ABCAC withdrawal design. The adolescents who received audio cuing were able to

successfully perform job skills, meet, and exceed the benchmarks set by the employer; audio

cuing was effective with a different costume and in a different performance setting. Removal of

the audio cues produced an immediate decline in performance. The authors indicated that the

overall effectiveness of audio cuing was related to the frequency of prompts delivered by the

attendant.

Wilczynski, Trammell & Clarke (2013) describe forms of technology that can help individuals with ASD acquire and maintain employment. The authors indicate that Assistive Technology (AT), Video Based Instruction (VBI), Covert Audio Coaching (CAC), and Alternative AT Supports can enhance the natural support available for individuals with ASD in the workplace. AT includes computer-based systems, personal computers, video recorders, tablets, iPods, iPads, and other devices. VBI includes prompting, video self-modeling, and video games to teach social interaction (Tartaro & Ratz, 2014). CAC utilizes video modeling instruction initially and follows with audio prompting. Alternative AT support includes personal digital assistants, smartphones, and other mobile devices that can be used for auditory and visual reminders, time management, organizational skills, and daily living tasks. Wilczynski, Trammell & Clarke (2013) discuss the need for more research to optimize outcomes for adults and adolescents with ASD and define successful technology integration in the workplace.

Methodology

This study was conducted in the summer of 2012 to examine the employment experiences of adults with ASD and compare it with the literature on employment. A qualitative research design (phenomenology) was used to explore training with technology and employment preparation. Phenomenology was the appropriate method for this inquiry because the experiences and perceptions of individuals with ASD was desired to provide information on the educational practices and practical actions necessary to support learners with ASD in an high-tech training environment.

Contact was made via email with the president of a technology institute located in North Texas that provided training to adults with ASD in video game design, design engine features and tools, map creation, and 3D Modeling. The technology institute was selected because of it is

one of a kind; participants enroll from other states, and there is an extensive waiting list. The non-profit institute trains adults with ASD to become video game designers, learn team building and workplace skills, and become self-sufficient. Activities at the institute include:

- instruction in Hammer, XNA, Unity, 3DS Max, and UDK,

- work in small group production teams, and

- employment skills training.

The primary researcher made a request to the institute's founders to conduct a phenomenological study which required face-to-face interviews with adult students with ASD and founders in an attempt to learn about training strategies, environmental considerations, and employment outcomes for students. The founders accepted the request. A subsequent request was made to the researcher's University Institutional Review Board to conduct the study, and approval was granted. The institute permitted the primary researcher to schedule and conduct semi-structured interviews with two founders and seven diverse participants: two African-American males, one Caucasian female, three Caucasian males, and one Asian-American male. The institute verified a diagnosis of ASD for each of the participants; all individuals at the institute are required to have valid testing which confirms a diagnosis of ASD from a licensed professional before admittance. The interview questions for founders and students of the institute were reviewed by the institute before interviews began. The institute selected participants based on their articulation ability and willingness to talk with the researcher.

At the initial face-to-face interview with each participant, informed consent was obtained. The primary researcher interviewed adult learners using semi-structured, open-ended questions that were guided by an interview protocol designed to gather experiential descriptions that explained employment history, education, and work experience (Roulston, 2010; Rossman &

Rallis, 2003). Questions in the interview protocol were informed by literature on adult workers with ASD which indicates that adults with ASD experience challenges securing and keeping competitive jobs, and they are often unemployed or underemployed (Chappel & Somers, 2010; Hendricks & Wehman, 2009; Higgins, Koch, Boughfman, & Vierstra, 2008; Howlin, Alcock & Burkin, 2005; Hurlbutt & Chalmers, 2004; Nesbitt, 2000; Schall & McDonough, 2010; Taylor & Seltzer, 2011). The interview protocol was piloted tested by two reviewers, and reviewed by the founders of the institute. Items were examined for clarity, readability, and suitability; once the protocol was clarified, it was given to the founders of the institute. Once they gave their approval, interviews using the protocol began. The protocol contained semi-structured questions about participants' previous employment, job experiences, past and present educational experiences, technologies they were using to design video games, and the type of employment they aspired to have after completing their coursework at the institute as well as additional information participants wanted to share.

Questions with founders of the institute were designed to gain insight into best practices for delivering technology training to adults with ASD. The questions in the protocol were piloted tested and asked to founders of the institute. The questions were also informed by the literature on the employment of adults with ASD. During the interviews, the founders were asked questions about the specific job skills the institute helped its students develop, the number of courses taken by students, whether or not students earned a certificate or degree after course completion, what technologies were used, the most difficult challenges they experienced educating adults with ASD, the best practices they discovered using technology to educate adults, the greatest lessons they learned as operators of the institute, and anything the founders would do differently.

Each interview was recorded on a smartphone, transcribed by hand, typed, and returned to the interviewee for verification. Face-to-face follow-up interviews were scheduled to gain clarification and additional information. All interviews took place in a comfortable and quiet environment where interviewees were allowed to answer questions in a relaxed atmosphere. Member checks of all interviews were done to ensure the accuracy and validity of the transcripts. The primary researcher was careful to use the same procedure during each interview and follow-up, ask interviewees the targeted questions, make notes of additional comments the interviewees shared, and review the recorded interviews and follow-up interviews as soon as possible after they took place. After transcription, the interviewees' responses were read several times, and the researchers highlighted the text deemed to be significant (Creswell, 1998).

Two independent coders met to categorize themes that emerged from interview transcripts. The responses from interviewees' open-ended questions were placed into categories using content analysis procedures (Strauss & Corbin, 1990). Questions analyzed were those most pertinent to the goals of the study. For adult students of the institute, questions about their experiences at the institute and the procedures and activities they favored revealed important information. For the founders, questions about technology selection, challenges they faced, greatest lessons they learned, and the best practices they uncovered presented helpful information. Researchers used a constant comparative method to build a list of categories and then compared notes and refined codes. No disagreements were noted between the coders. The final list of categories revealed the following areas: student-centered learning, having autism, understanding ASD, reduced pressure, no deadlines, and individualization of technology training.

The clusters of meaning and the themes were used to prepare a description of interviewees' experiences. Using thematic analysis (emerging themes) helped the researchers better understand the shared experiences of autistic learners attending a special technology institute. The researchers were able to understand the essence of the interviewees' experiences and gain insight into the unique learning needs of these individuals. The institute is unique in its approach and goals; studying its learners provided a unique opportunity to explore a relatively unexplored perspective.

Findings

Information from both student and founder interviews revealed important insights on preparing adults with ASD for employment in the field of technology, using technology training to prepare adults with ASD for jobs in video game design, and the work histories of adults with ASD. What practices are effective for preparing adults with ASD for employment in the field of technology?

Comments from founders of the institute indicated that patience and understanding were important themes when preparing adults with ASD for employment using technology. Both founders indicated that individualized training, a functional approach for studying technology, and applications-oriented activities are needed to help students generalize content to other areas. One founder also indicated that explicit instruction in team-building, navigating social groups, and building consensus are important. His comment is listed below:

"Training is presented at the student's pace. Students engage in professional development activities designed to help them master and functionally use the design tools in our curriculum. One hour each week students also engage in Cabal Training. This is mandatory, and it is application-oriented. Students work with their peers in small class training sessions to engage in team building and consensus building. We offer 1 hour each week of production meetings where students talk about building video games and other issues related to work environments."

The founders also indicated that a major theme was the structure of the program. The program was designed based on the needs of individuals with ASD, so it contained predictability, reasonable schedules, down time, and networks of technical and organizational support. These elements are critically important when preparing students for employment in high-tech fields. Subthemes that emerged from the founders comments are provided below:

"develop predictable routines and reasonable schedules for tasks,"

"provide a job coach or a network of support for social interaction,"

"acclimate students to the video game design environment,"

"have time for reflection," and

"employ engaging activities, patient instructors, and the absence of judgment and intimidation." All of these are well-documented principles in Adult Learning Theory (Gagné & Driscoll, 1988). The founders indicated that having the students complete a portfolio showcasing completed projects was good preparation for employment interviews. Lastly, the founders expressed the need for society to become more understanding and more willing to provide opportunities for adults with ASD to work in technology fields in the private and public sectors.

Students who attended the institute indicated that they felt that their instructional needs were being met, and they were learning the technology skills in a comfortable environment that provided them with the structure, individualized instruction, and the reminders they need. Some of the comments on instructional practices that were helpful to them are provided below:

"[The Institute] uses one-on-one and delivers instruction as fast or as slow as needed."

"Clear expectations, no deadlines, structure, support, and the fact that I'm surrounded by gamers like me – the whole organization revolves around Autism and video gaming."

"No waiting for an answer, and no competition with other classmates."

"We practice lessons regularly so the skills we develop won't wear out and we won't forget about them."

"I guess I can describe the lack of pressure."

What technology training can be used to prepare adults with ASD for jobs in video game design?

Students at the institute were taking classes to learn the capability of video game engines and create graphic environments for games. The following tools were a part of the curriculum: UDK, Hammer, Valve's Software level design tool, Photoshop, Maya, Autodesk 3DS, and Visual Studio. These tools were selected based on their popularity, accessibility, and cost-effectiveness. Students were learning Digital Art, 3D Modeling, Coding, and 2 and 3D design. One founder noted "Our courses are based on the tools that the professional technology industry uses to create media. Students are expected to work on products for release, as professionals. Our program is designed to help them do this. A table displaying the technology training completed by interviewees is presented below as Table 1. An analysis of data from the interviews with students indicated that 71.42% of the students were learning Hammer and 28.57% were learning Unity (game engine for mobile devices, smartphones, and other consoles). At least one student was enrolled in each of the following classes: XNA, 3DS Max, and UDK.

Table 1

Types of Technology Training Completed by Interviewees to Prepare for Jobs in Video Game Design

Technology Training	Students	Percentage
Hammer	5	71.42
XNA	1	14.28
Unity	2	28.57
3DS Max	1	14.28
UDK	1	14.28

* Seven interviewed

Founders of the institute stressed as a theme the need to provide training on industry standard software used to design game engines. They indicated that this was essential preparation for employment as a video game designer. They further indicated that it was necessary to have students work on projects they might encounter in the industry. Some of the subthemes that emerged were "work toward a practical result, not a grade," "increase student engagement," and "focus on the strengths of the student." In addition, the founders indicated that the institute had to "consider student needs and sensory issues," and "make sure students experience success." Most students who were interviewed indicated that success for them would be a future in technology designing video games. Students were asked how they would define their personal success after completing their work at the institute, and their comments are presented below:

"Game design and actually earn a college degree."

"I would like to work for a major gaming company like Microsoft or Sony coding or work as a sports announcer."

"Character designs, graphic design, character models, computer graphic imagery."

"If I do well here, I'll still be in game design, but as far as what aspects, that's completely up in the air."

"I measure success by the projects created."

Results from the work experiences of adults are presented in Table 2. Analysis of data from student interviews indicated that the past employment of students varied greatly and included customer service, retail, and skilled and/or professional positions. The positions held in customer service and retail were atypical because of the students' ages. Underemployment of adults with ASD was evident by the fact that one adult was working at Wal-Mart (14.2%) in a job that did not utilize his intellectual ability, two (28.6%) were employed – one delivering papers, and one at a Taco Shop. These jobs were also beneath the potential of these individuals. This research mirrored the literature; the majority of students (57.2%) were unemployed, living at home or attending community college. Although one student had worked as an Engineer, she was no longer in that profession. Since attending the institute, three of the interviewees (42.8%) have been hired by the institute as full or part-time instructors.

Table 2

Types of Prior Employment Held by Interviewees

Employment	Number of Students	Percentage
Retail	1	14.28
Engineering & Delivery*	1	14.28
Food Service	1	14.28

*Six males were interviewed (more males are diagnosed with ASD than females); this interviewee was a female. A total of seven individuals were interviewed.

Varied work histories, underemployment, and unemployment were themes that emerged from an analysis of the work histories of adults with ASD. These findings affirm those in the literature; adults with ASD are likely to be unemployed or underemployed (Hendricks & Wehman, 2009; Howerda, van der Klink, Groothoff, & Brouwer, 2012). In addition, adults with ASD have a difficult time with social interaction in the workplace, make less money than their neurotypical counterparts, and change jobs more frequently (Howlin, Alcock, & Burkin, 2005; Hurlbutt & Chalmers, 2004; Müller, Schuler, Burton, & Yates, 2003). In order to retain employees with ASD, supported employment that is the right balance between the individual (skills, knowledge, ability, and motivation), the job, and the work environment provides the best opportunity (Garcia-Villamisar, Wehman, & Navarro, 2012; Hendricks & Wehman, 2009; & Howerda, van der Klink, Groothoff, & Brouwer, 2012).

Discussion

Student participants in this study were asked about their employment experiences to determine whether or not these matched findings in the literature - adults with ASD tend to be unemployed or underemployed because of social, communicative, or behavioral challenges (Chappel & Somers, 2010; Hendricks & Wehman, 2009; Nesbitt, 2000; Taylor & Seltzer, 2011). Underemployment was reported by students prior to attending the institute. The institute hires its advanced students to deliver instruction because they are proficient using the software, they understand ASD, and they are able to deliver instruction effectively. Instruction at the institute focuses on social skill development and team work. Students work in production teams and attend meetings to simulate real-life situations that occur in the workplace. Through these activities they learn to practice skills that are beneficial: listening to the perspectives of others, sharing responsibilities, dividing project goals, collaborating on design features, problem-

solving as a team, and meeting deadlines, and self-advocacy. These practices provide opportunities for adults with ASD to learn to contribute to a team project and work toward common goals – skills that are critical in the workplace.

Training with technology is a desirable, and proficiency with technology is an attainable professional and personal goal for adults with ASD. As a result, technology should be used in a variety of capacities with adults with ASD: deliver instruction, assist users with organizational skills, perform record-keeping, task management and scheduling, present reminders, provide note-taking capability and data analysis, and provide other instructional and job-related tasks. Technology training, according to the adults with ASD in this study, should be individualized, delivered without stressors, based student-centered approaches, and provided by individuals who understand ASD or have ASD. Instruction with high-tech tools can be an effective strategy for preparing adults with ASD for employment in lucrative career fields. In addition, employers have an opportunity to fill numerous IT vacancies with adults with ASD who embrace and excel at the use of technology.

This institute for adults with ASD was approached by Google and other large corporations who are seeking to employ its graduates. As such, the institute should consider hiring a career development/corporate liaison to work with Google and other technology companies to facilitate the employment of its students. To improve society's ability to understand the employment needs of adults with ASD, an awareness campaign should be created to highlight the issues and needs. Lastly, partnerships with corporations like Google should be forged to create opportunities for capital development, career planning, and job placement.

Conclusions

The analysis of interviews indicated that working in small teams, being able to work with others who have ASD, learning to develop a strong work ethic, knowing how to relate to others, having predictable routines and reasonable schedules for tasks, utilizing a job coach or a network of support for social interaction, having time to become acclimated to the environment, and using technology are preferred by adults with ASD as they prepare for employment. Adults interviewed experienced unemployment and underemployment, and they expressed an interest in video game design as well as a desire to work in high-tech environments.

Analysis of data from the founder's interviews indicated that accessibility to technology, real-life preparation with job skills and employment, one-on-one training, communicated expectations, matching job requirements with the adult's skill set, and positive reinforcement from administrators and teachers were the best practices for preparing adults with ASD for employment in their technical training environment; the themes that emerged are aspects of supportive employment, and they are necessary to lessen the anxiety of individuals with ASD and ensure their success. Technology tools (VBI, CAC, and Alternative AT) can be utilized for training and development, and they can assist individuals with ASD with performance tasks, organizational issues, and behavioral support. These tools can help persons with ASD gain and maintain high-tech positions.

Limitations and Future Research

A limitation of the research was its sample size. It was a small-N study aimed at identifying relevant factors for preparing adults with ASD for employment. As such, the findings cannot be generalized. However, the preferences of adults with ASD, the success of the institute, and the founders' perceptions are worthy of further investigation. In addition, the

inclusion of a third perspective by employers of adults with ASD could provide a wealth of additional information.

Future research should include large qualitative and quantitative research designs with adults diagnosed with ASD. Research with employers who do not hire adults with ASD should be undertaken to uncover their perceptions, issues, and points-of-view.

References

Allen, K., Burke, R., Howard, M., Wallace, D., & Bowen, S. (2012). Use of audio cuing to

    expand employment opportunities for adolescents with Autism Spectrum Disorders and

    Intellectual Disabilities. *Journal of Autism and Developmental Disorders*, *42*(11), 2410-

    2419. doi: 10.1007/s10803-012-15-19-7.

Autism Society of America. (2014). About Autism. Retrieved from http://www.autism-

    society.org/about-autism/.

Bregman, J. (2005). Definitions and characteristics of the spectrum. In D. Zager (Ed.), Autism

    Spectrum Disorders: Identification, education, and treatment (pp. 3-46). Mahwah, NJ:

    Lawrence Erlbaum Associates.

Burke, R., Andersen, M., Bowen, S., Howard, M., & Allen, K. (2010). Evaluation of two

    instruction methods to increase employment options for young adults with Autism

    Spectrum Disorders. *Research in Developmental Disabilities*, *31*(6):1223-1233. doi:

    10.1016/j.ridd.2010.07.023.

Bureau of Labor Statistics. (2012). Employment status of the civilian population by sex, age, and

    disability status, not seasonally adjusted. Retrieved from

    http://www.bls.gov/news.release/empsit.t06.htm

Chappel, S. & Somers, B. (2010). Employing persons with Autism Spectrum Disorders: A

    collaborative effort. *Journal of Vocational Rehabilitation*, *32*(2)*,* 117–124. doi:

    10.3233/JVR-2010-0501.

Creswell, J. (1998). *Qualitative inquiry and research design: Choosing among five traditions*.

    Thousand Oaks, CA: Sage Publications.

Diament, M. (2012). Little known about helping teens, adults with Autism. Retrieved from

     http://www.disabilityscoop.com/2012/08/28/little-known-helping-autism/

Foley, B. & Staples, A. (2003). Developing augmentative and alternative communication (AAC)

     and literacy interventions in a supported employment setting. *Topics in Language*

     Disorders, *23*(4), 325-343.

Gagné, R. M. & Driscoll, M. P. (1988). *Essentials of learning for instruction* (2nd ed.). Upper

     Saddle River, NJ: Prentice-Hall.

Garcia-Villamisar, D., Wehman, P., & Navarro, M. (2002). Changes in the quality of autistic

     people's life that work in supported and sheltered employment: A 5-year follow-up study.

     Journal of Vocational Rehabilitation, *17*(4), 309-312.

Hendricks, D. (2010). Employment and adults with Autism Spectrum Disorders: Challenges and

     strategies for success. *Journal of Vocational Rehabilitation*, *32*(2), 125–134. doi:

     10.3233/JVR-2010-0502.

Hendricks, D. & Wehman, P. (2009). Transition from school to adulthood for youth with Autism

     Spectrum Disorders: Review and recommendations. *Focus on Autism and Other*

     Developmental Disabilities, *24*(1)*,* 78–88. doi: 10.1177/1088357608329827.

Higgins, K., Koch, L., Boughfman, E., Vierstra, C. (2008). School-to-work transition and

     Asperger Syndrome. *Work*, *31*(3), 291-298.

Holwerda, A., van der Klink, J., Groothoff, J., & Brouwer, S. (2012). Predictors for work

     participation in individuals with an Autism Spectrum Disorder: A systematic review.

     Journal of Occupational Rehabilitation, *22*(3), 333-352. doi: 10.1007/s10926-011-9347-

     8.

Howlin, P., Alcock, J., & Burkin, C. (2005). An 8 year follow-up of a specialist supported

employment service for high-ability adults with autism or Asperger Syndrome. *Autism*,

9(5), 533-549. doi: 10.1177/1362361305057871.

Hurlbutt, K. & Chalmers, L. (2004). Employment and adults with Asperger Syndrome. *Focus on*

Autism and Other Developmental Disabilities, *19*(4), 215-

222.doi:10.1177/10883576040190040301.

Lattimore, L. & Parsons, M. (2006). Enhancing job-site training of supported workers with

Autism: A reemphasis on simulation. *Journal of Applied Behavior Analysis*, *39*(1), 91-

102.

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. M. (2007). *Learning in adulthood: A*

comprehensive guide (3rd ed.). San Francisco, CA: Jossey-Bass.

Moore, D., McGrath, P., & Thorpe, J. (2000). Computer-Aided Learning for people with Autism

– a framework for research and development. *Innovations in Education and Training*

International, *37*(3), 218-228.

Müller, E., Schuler, A., Burton, B., & Yates, G. (2003). Meeting the vocational support needs of

individuals with Asperger Syndrome and other Autism Spectrum Disabilities. *Journal of*

Vocational Rehabilitation, *18*(3), 163-175.

Nesbitt, S. (2000). Why and why not? Factors influencing employment for individuals with

Asperger Syndrome. *Autism*, *4*(4), 357-369. doi: 10.1177/1362361300004004002.

Oberleitner, R., Ball, J., Gillette, D., Naseef, R., & Stamm, B. (2006). Technologies to lessen the

distress of Autism. *Journal of Aggression, Maltreatment & Trauma*, *12*(1-2), 221-242.

Pratt, C. (2013). Increasing incidence of Autism Spectrum Disorders continues in Indiana.

Retrieved from http://www.iidc.indiana.edu/?pageId=361

Parent, W. S. & Everson, J. M. (1986). Competencies of disabled workers in industry: A review of business literature. *Journal of Rehabilitation*, *52*(4), 16-23.

Roblyer, M.D. & Doering, A.H. (2010). *Integrating Educational Technology into teaching*, (5th Ed.). Boston, MA: Pearson.

Rossman, G. & Rallis, S. (2003). *Learning in the Field: An introduction to Qualitative Research* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Roulston, K. (2010). *Reflective interviewing: A guide to theory and practice.* Thousand Oaks, CA: Sage Publications.

Schall, C. (2010). Positive behavior support: Supporting adults with Autism Spectrum Disorders in the workplace. *Journal of Vocational Rehabilitation*, *32*(2), 109–115.

Schall, C. M. & McDonough, J. T. (2010). Introduction to special issue Autism Spectrum Disorders: Transition and employment. *Journal of Vocational Rehabilitation, 32*(2), 79 – 80.

Strauss, A. & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.

Strickland, D., Coles, C., & Southern, L. (2013). JobTIPS: A transition to employment program for individuals with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*. *43*(10), 2472-2483. doi: 10.1007/s10803-013-1800-4.

Tartaro, A. & Ratz, C. (2014). Incorporating technology into peer social group programs. In Boser, K., Goodwin, M., & Wayland, S. (Eds.), *Technology tools for students with Autism*. Baltimore, MA: Paul H. Brookes Publishing.

Taylor, J. & Seltzer, M. (2011). Employment and post-secondary educational activities for young adults with Autism Spectrum Disorders during the transition to adulthood. *Journal of*

Autism and Developmental Disabilities, *41*(5), 566-574. doi: 10.1007/s10803-010-1070-3.

Wilczynski, S., Trammell, B, & Clarke, L. (2013). Improving employment outcomes among adolescents and adults on the Autism Spectrum. *Psychology in Schools*. *50*(9), 876-887. doi: 10.1002/pits.21718.