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Running head: PERCEPTIONS OF VET SPECIALISTS AND EMPLOYERS OF ASD

PERCEPTIONS OF VOCATIONAL EDUCATION TRAINING SPECIALISTS AND  
EMPLOYERS OF ADULTS WITH AUTISM SPECTRUM DISORDER

BY

MARIE-CÉCILE HEINZE

A dissertation submitted to the Donald E. and Helen Ross College of Education,

Lynn University,

In partial fulfillment of the requirements

for the degree

Doctor of Education

Approved by

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Jennifer Lesh, Ph.D., Chair

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Jennie Trocchio, Ph.D.

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Jagathy Nair, Ph.D.

Boca Raton, Florida

May 2019

## ABSTRACT OF THE DISSERTATION

Perceptions of Vocational Education Training Specialists and Employers of Adults with Autism Spectrum Disorder

By MARIE-CÉCILE HEINZE

Dissertation Chairperson:  
Jennifer Lesh, Ph.D.

**PROBLEM:** Individuals with autism spectrum disorder (ASD) commonly struggle transitioning into adulthood, specifically finding and obtaining employment. Statistically, individuals who are on the spectrum have lower employment rates, or hold jobs with lower earnings compared to their non-disabled co-workers in a large urban county South Florida. Despite the large unemployment rate for individuals with ASD, previous research has demonstrated that they are capable in working in occupations with proper ongoing vocational support.

**METHOD:** Forty-two vocational education specialists and 43 employers known to work with and to employ individuals with ASD ages  $\geq 18$  in a large urban county in South Florida were emailed a circular asking to take part in a semi-structured interview evaluating current vocational education training (VET) programs. The circular was also displayed in local business. Participant's responses were then coded and categorized into multiple recurrent themes for each semi-structured interview question.

**RESULTS:** Of the 85 surveyed, 60 participated ( $n = 31$  vocational specialist and  $n = 30$  employers) via email, and 1 participated via telephone. Of the 31 vocational specialists who participated, 29 codes were produced from the 117 responses that were recorded. Four reoccurring themes were developed, which were autonomy, modeling, funding, and grocery store. Of the 30 employers who participated, 21 codes were produced from 118 responses. Three reoccurring themes were created, which were equality, consistency, and training.

**SIGNIFICANCE:** Responses from vocational specialists and employers of ASD were collectively analyzed and interpreted to create an Employer's Guide for Integrating Employees with Autism Spectrum Disorder. The guide provides an outline for employers who hire and work with individuals with ASD. The guide includes strategies on what the employers can do to help individuals with ASD maintain long-term employment. It includes strategies to increase employee motivation, cope with stress management, helping employers get to know their employee, enhance communication, and improve social and behavioral skills. The hope is that as employers gain further understanding of ASD, it will allow them to successfully train employees who are on the spectrum as well as for adults with ASD enhancing employment outcomes and to live fulfilled lives.

This dissertation is dedicated with love and affection to my son, Winston.

Lieber Winston,  
So lange ich bin, verteidige ich Dich.  
So lange ich atme, kämpfe ich für Dich.  
So lange ich lebe, liebe ich Dich.

## ACKNOWLEDGEMENTS

I want to express my profound appreciation to my husband, Joshua.

Josh, I thank you for your support and patience that you had for me throughout this journey. I am eternally grateful for your love.

I want to bestow a special appreciation to my father.

Papi, Du hast mir schon von klein auf gezeigt was man mit harter Arbeit erreichen kann. Deine Loyalität und Deine Liebe werde ich nie als Selbstverständlichkeit nehmen. Wie Winston Churchill sagte: "Success is not final; failure is not fatal: it is the courage to continue that counts."-Sir Winston Churchill

My deepest gratitude to my mother.

Mami, ich weiss gar nicht wie ich Dir genug danken kann, für Alles was Du für mich gemacht hast. Ich hoffe, dass ich nur eine halb so gute Mutter zu Winston sein kann wie Du es für mich bist. Ich liebe Dich über Alles.

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I want to express my appreciation to Dr. Jennie Trocchio.

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## CHAPTER I

### INTRODUCTION

Recent studies have indicated that the majority of individuals with autism spectrum disorder (ASD) encounter difficulties obtaining employment, and face discrimination within the workplace (Wehman et al., 2014). Despite the implications of vocational education training (VET) within the educational system and workforce, there remains a continuous discrepancy obtaining, and maintaining employment upon graduation from high school or secondary education among students with ASD (Wehman et al., 2014).

The rate of children with ASD is increasing on a yearly basis. Since 2000 there has been a 14.6% increase in children diagnosed with ASD in the United States, where currently 1 in 68 children are diagnosed with ASD (CDC, 2017). As children diagnosed with ASD mature and graduate high school, there is a need for mandatory career preparation and ongoing educational support, particularly related to preparing students with ASD in future career paths.

To determine the efficacy of current employment programs for adults with ASD, two vocation education programs were first examined. This included Project SEARCH and the National Longitudinal Transition Study-2 (NLTS2) in 2009 (Wehman et al., 2013).

**Diagnosis.** Autism is a neurodevelopmental disorder recognized by impairments in verbal and non-verbal communication, social interactions, and repetitive behaviors (CDC, 2017). The exact cause of ASD has yet to be elucidated, however numerous risk factors (*i.e.* genetic, environmental, and prenatal abnormalities) have been identified that contribute to neurocognitive manifestations (CDC, 2017). The diagnostic criteria of ASD is classified based on the standards of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V), which

includes persistent social communication and interaction deficits, as well as restricted, repetitive patterns of interest, activities, or behavior (Taylor et al., 2004).

**Prevalence and Costs.** Table 1 shows that the prevalence of ASD is increasing annually. Currently, one in sixty-eight children are diagnosed with ASD, and are prevalent in all racial, ethnic, and socioeconomic groups (CDC, 2017). The total costs per year for children with ASD in the United States were estimated to be between \$11.5 billion – \$60.9 billion US dollars. This significant economic burden represents a variety of direct and in-direct costs, from medical care to special education to lost parental productivity (CDC, 2017). In addition to medical costs, intensive behavioral interventions for children with ASD cost \$40,000 to \$60,000 per child per year (CDC, 2017).

Annually, the United States spends \$11.5 billion - \$60.9 billion for children with ASD (Buescher et al., 2014; Lavelle et al., 2014). Burgess and Gutstein, 2007 reported the vast majority of ASD therapies primarily focus on increasing their quality of life, and self-sufficiency. Interventions commonly include psychosocial medication, speech-language, and occupational therapies (Burgess & Gutstein, 2007).

**Employment Benefits.** It is well recognized that candidates with ASD are overlooked when seeking employment (Holwerda et al., 2012). Shattuck et al., 2012 discussed that employment allows those with ASD to develop interpersonal, social, and communication skills (Shattuck et al., 2011). Obtaining employment will not only fulfill their autonomy, self-confidence, and independence, but will also increase self-esteem throughout their lives (Hart et al., 2010). Individuals with ASD bring enormous creativity. Autistic minds are wired differently, and imaginations can be extreme. Managers may take advantage of this when seeking creative ideas or ideas to solve complex problems (Hart et al., 2010).

**Current Vocational Education Guidelines.** Many individuals with ASD demonstrate impairments in vocational skills and self-motivation, limiting their ability to obtain employment, which may indirectly have negative effects on their overall wellbeing (Brock et al., 2016). The ability of an individual with ASD to acquire and maintain desirable working outcomes may be unattainable until they complete vocational education training (Brock et al., 2016). Given the poor employment outcomes among those with ASD, it is evident that more needs to be done for the improvement of long-term outcomes. Despite significant evidence that individuals with ASD can be taught vocational skill sets, there remains a disparity of appropriate training methods, and whether specific interventions targeting vocational skills have resulted in sustained employment long-term (Brock et al., 2016).

The purpose of VET is to prepare students beyond high school, including employment and postsecondary education (PSE). (Wehman et al., 2014). Despite an increase in the annual enrollment of VET and PSE programs, many continue to remain uncoordinated, inconsistent, and unreliable (Wehman et al., 2014). Most VET programs are offered off site in various organizations, charter, and private schools but not within public schools. District programs that are available lack satisfactory VET in high schools due to a lack of funding and resources (Senator, 2017). As students with ASD transition to employment from VET programs identified there are standardized VET guidelines that must be included, which include (Hart et al., 2010):

1. Teaching students with ASD in natural school settings
2. Models in transition planning
3. Coordination across all regional levels
4. Standardized principles in PSE courses and course material
5. Peer mentoring

6. Tutoring
7. Internships
8. Increased social and communication skills training
9. Increasing autonomy, self-confidence, and determination

These guidelines provide an outline for current and future post-secondary options, and models of implementation. These methods were eventually adapted and incorporated by the American Association on Intellectual and Developmental Disabilities, and Higher Education (Hart et al., 2010).

### **Statement of the Problem**

Research demonstrates that when performed correctly, VET is effective for students with ASD as it enhances one's quality of life and provides the ability to assimilate into society (Wehman et al., 2016). Current VET programs primarily focus on the ability to accomplish job skillsets without addressing underlying issue (*i.e.* emotional, social, and behavioral deficits) that would impair one's ability in the workplace.

The 2015 Florida Disability Status Report reported an increasingly high unemployment rate of people with ASD in large urban areas in South Florida. Despite this knowledge there remains a gap in between the efficacy of VET and the high unemployment rate in Florida. Therefore, a new vocational education program should be developed and implemented in schools to ensure those with ASD have the ability to obtain and maintain employment upon graduation (Disability Status Report Florida, 2015).

### **Purpose of the Study**

The purpose of this study is to investigate the development of a solution to enhance the unemployment rate currently facing in a large urban county in South Florida for young adults

with ASD ages 18 and over.

Throughout the study solutions will be developed to enhance the employment rate by developing a vocational training guide for employers to hire and support individuals with ASD. This will facilitate employers in the recruitment and hiring employees, along with incorporating communication and behavioral strategies, interpersonal skills, and time management for employees with ASD.

Transition programs such as the Project 10 Transition Education Network are offered in a South Florida for young adults with ASD. However, they are commonly offered off site and inaccessible within the public schools, making it a nonessential component of the student's academic curriculum. A current program to assess the student's future employment possibilities and work suitability for young adults with ASD towards their future is currently nonexistent (Brock et al., 2016).

Not all individuals with ASD who graduate from high school find employment. Many regress and may become depressed due to a lack of social interaction, independence, and autonomy (Brock et al., 2016). This not only affects the individuals with ASD, but also their families, community, the state, and the country, as they become dependent on public and social services. An integral part to ensure employability for adults with ASD ages 18 and over are VET programs, post-programs, and training support programs. These will increase the chances of participants with ASD having a successful and independent future (Shattuck et al., 2012).

Many individuals with significant disabilities demonstrate impairments in vocational skills, and self-motivation, limiting their ability to obtain employment, which may indirectly have negative effects on their overall wellbeing (Brock et al., 2016). The ability of an individual with ASD to acquire and maintain desirable working outcomes may be unattainable until they

complete vocational education training (Brock et al., 2016). Given the poor employment outcomes among those with ASD it is evident that more needs to be done for the improvement of long-term outcomes. Despite significant evidence that individuals with ASD can be taught vocational skill sets, there remains a disparity of appropriate training methods, and whether specific interventions targeting vocational skills have resulted in sustained employment (Brock et al., 2016).

Considering the greater degree of adversity in which individuals with ASD encounter, more balanced efforts should be implemented to identify efficacious interventions at teaching these individuals. Research suggests that individuals with disabilities are often misplaced into sheltered workshops, assisted living, and habilitation centers. It is therefore essential that future transitional programs focus on vocational skills to those with ASD (Brock et al. 2016). If efforts are made during the transition from high school to adulthood in preparation for employment, there is a possibility that long-term employment would be enhanced.

One likely outcome for individuals with ASD is they no longer engage in vocational activities, habilitation programs, or remain at home rather than within the community when vocational services are not available (Brock et al., 2016). Community skills vary, often including a wide range of tasks (*i.e.* clerical, and food services). Research has shown that individuals with ASD can be successful in community employment, suggesting that future programs should include building rapport with local businesses.

As literature continues to identify evidence-based practices that are effective at teaching vocational skills, future programs should be developed to identify the most appropriate interventions in the context of one's needs, including the incorporation of applied behavior analysis (Brock et al., 2016). Additionally, future programs should explore how technological

advancements can enhance employability for those with ASD, while simultaneously decreasing the need for vocational services (Brock et al., 2016).

Despite the outcomes reported in the National Longitudinal Transition Study-II (NLTS-II) as indicated by Wehman et al., 2016, a disparity remains. Although individuals with ASD can be taught vocational skills, they are commonly unsuccessful at finding and maintaining employment (Brock et al., 2016). This may be due to the lack of availability, inadequacies within a program, or ineffectiveness. There is no clear indication which intervention is more beneficial for promoting employability skills.

In the future, interventional programs must go beyond merely teaching vocational skills (Brock et al., 2016). Newer strategies should explore ways to increase employment outcomes for those with ASD long-term in community-based settings (Brock et al., 2016). Without a renewed focus it is likely that employment outcomes for individuals with ASD will remain unchanged (Brock et al., 2016).

The goal of the study is to develop a VET guide for employers that will incorporate social and behavioral strategies for adults with ASD in the workplace. Employer's outlook toward hiring participants with ASD will change in the positive direction as more services become available to their business to facilitate VET and allow competency long-term.

The guide is being created using the foundation of measuring variables (*i.e.* self-regulation, social competence, empathy, responsibility, person's environment, and vocational skills). The guide is created by accumulating general facts, prior and newly collected research, and then analyzing. The collected data of vocational education specialists and employers of ASD ages 18 and over will form the basis of the guide.

### **Significance of the Study**

Individuals with ASD capable of integrating into a general education setting but lack social and behavioral skills should be entitled to the same educational and employment opportunities as anyone else. Students with ASD are often overlooked for employment opportunities (Hendricks, 2010). Most curriculums that target students with ASD are primarily social and emotional in nature (Hendricks, 2010). Despite this knowledge, those with ASD frequently remain unemployed, and thus indirectly affecting their quality of life and wellbeing.

As of March 2015 the current unemployment rate in the state of Florida is 4.80% and 4.50% in a large urban county in South Florida according to the U. S. Bureau of Labor Statistics (Disability Status Report Florida, 2015). In comparison, the unemployment rate for people with disabilities was nearly three times the jobless rate in South Florida (Disability Status Report Florida, 2015). Table 2 demonstrates that among disabled workers, approximately 11% are cognitively disabled, and make \$6,500 less than non-disabled annually in Florida (Disability Status Report Florida, 2015).

Cognitively disabled workers are more likely to graduate from high school but less likely to pursue secondary education compared to non-disabled (Disability Status Report Florida, 2015). Among disabled workers in a large urban county in South Florida, 11% are cognitively disabled, while the unemployment rate is 2.8% as shown in Table 3 (Disability Status Report Florida, 2015).

Impairments in behavioral and communicative functioning associated with ASD affect social functioning. These deficits and traditional VET methods are counterproductive, as current programs primarily focus on the ability to perform a task or job skillset correctly, while failing to address underlying social, emotional, or behavioral deficits, negatively impacting their ability to

obtain and maintain employment (Barneveld et al., 2014). Along with behavioral issues individuals with ASD typically have additional comorbidities like anxiety, bipolar disorder, and attention-deficit hyperactivity disorder (ADHD) that may further complicate their involvement in job-related activities (Barneveld et al., 2014; Dalsgaard et al., 2013).

The lack of employment for those with ASD is further complicated given the positive impact of employment on quality of life (Barneveld et al., 2014). Employed individuals demonstrated greater mental health, life satisfaction, autonomy, and self-worth compared to those who were unemployed. With the considerable benefits of employment across many areas it is vital that individuals with ASD have opportunities that those without disabilities normally take for granted via supported employment (Wehman et al., 2014).

### **Rationale of the Study**

Despite the difficulties that have been identified, individuals with ASD possess many traits and attributes that are desired by employers, and should be viewed as beneficial within the workplace (Barneveld et al., 2014). The role of VET services in the process of developing the employability skill sets of individuals with disabilities is considered to be very important (Barneveld et al., 2014). The aim of VET is for participants with disabilities to develop self-awareness skills, to be informed about the educational system, studies, vocations, and socio-economic life (Barneveld et al., 2014). Additionally, it will allow participants to receive guidance with career decisions, and finally to experience the transition into vocational, economic, and social reality as smoothly as possible (Barneveld et al., 2014).

In the last ten years various agencies and organizations in the United States and Europe have developed a variety of programs for the vocational training of adults with ASD (Holwerda et al., 2012). The main focus is to promote vocational, social, and communication skills

(Holwerda et al., 2012). Furthermore, some of these programs reflect new trends in the labor market, and aspire to ensure work for individuals with ASD following the model of supported employment (Holwerda et al., 2012).

Despite current advancements in VET, employment outcomes for individuals with ASD remain inconsistent and unreliable (Hillier & Galizzi, 2014). Students with ASD lag behind non-disabled students or students with other disabilities in finding employment opportunities. It is the hope of this research to fill this void. Models for developing vocational skills that have been previously implemented by various agencies, as well as the prospects for the vocational training will be taken into consideration when designing a vocational curriculum (Wehman et al., 2014).

### **Theoretical Framework**

Over the years the challenge has been to explain all of the features of autism, across all individuals on the autistic spectrum (Merrill, 2015). Currently scientific research points to multiple genes, which may or not may coincide in the affected persons (Merrill, 2015). That is why different authors try to describe the global psychological disorder underlying the behavioral symptoms that are observed in people with ASD. The most recognized theories are indicated in Table 4.

Theories such as Theory of Mind (ToM), Weak Central Cohesion (WCC), and Executive Functioning are vital theories that predict specific traits in individuals with ASD (Merrill, 2015). Those theories often transmit into the workforce of the individuals with ASD, which makes it difficult for them to gain or maintain employment (Merrill, 2015). The lack of behavioral and social deficits can hinder many future opportunities. Characteristics such as being systematic, non-empathetic, facing difficulties understanding the difference between a fact and fiction, fixation on details, and the challenge of following multi step directions are all strong indications

that can hinder a work experience, therefore obstructing the wellbeing of an individual with ASD (Holwerda et al., 2012). Vocational education training can prohibit these deficits by modeling, training and practicing the desired skill sets that are necessary in an appropriate work environment (Holwerda et al., 2012).

### **Conceptual Framework**

The goals for individuals with ASD post-VET are to enhance autonomy, independency livelihood, employability, and employer satisfaction. Individuals with ASD have common deficits such as social reciprocity, communication, and unusual or repetitive behavior according to the DSM-5. The study will involve vocational specialists in a large urban county in South Florida, specifically targeting the efficacy of VET for males and females with ASD aged 18 and over, in addition to assessing the effect it has for independent living skills, social skills, and behaviors. Employers in a large urban county in South Florida who hired individuals with ASD over the age of 18 will also be asked to take part in completing a semi-structured interview in order to determine the efficacy of VET programs in the industry.

### **Research Questions**

1. Are additional training resources needed to support employees with ASD?
2. What importance do social skills have in maintaining employment for individuals with ASD?
3. What would assist employers in hiring individuals with ASD?

### **Definition of Terms**

#### **Autism Spectrum Disorder (ASD)**

A neurodevelopmental disability that may cause significant social, communication, and behavioral challenges (Autism Spectrum Disorder, 2017).

**Business Partners**

A commercial entity with which another commercial entity has some form of alliance. This relationship may be a contractual, exclusive bond in which both entities commit not to ally with third parties (Kask & Linton, 2013).

**Community Partners**

Community partners are partnerships that provide opportunities to promote workforce development and continuing education. Partnerships provide students and faculty opportunities for community engagement to best serve community and global constituencies (Indiana University Bloomington, 2017).

**Diagnostic and Statistical Manual of Mental Disorders (DSM–V)**

The Diagnostic and Statistical Manual of Mental Disorders (DSM-V) is used by clinicians and researchers to diagnose and classify mental disorders. “The diagnostic criteria are concise and explicit, intended to facilitate an objective assessment of symptom presentations in a variety of clinical settings; inpatient, outpatient, partial hospital, consultation-liaison, clinical, private practice, and primary care (Association, A. P., n.d.)”.

**Employers**

It will be acknowledged that employers will have an understanding of the diagnosis, and characteristics (*i.e.* social development, communication, and repetitive behavior) of ASD. Employers should understand that autism is a spectrum, and that no two persons with ASD are the same. Jobs skills should be tailored to one’s individual capabilities. It will be assumed employers will provide routine, and outgoing vocational workshops to ensure outgoing employability success (Taylor et al., 2013).

### **Evidence Based Curriculum**

An approach to all aspects of education, from policy-making to classroom practice, where the methods used are based on significant and reliable evidence derived from experiments (Spring, 2010).

### **Individuals with Disabilities Education Act (IDEA)**

The Individuals with Disabilities Education Act (IDEA) is a law ensuring services to children with disabilities throughout the nation. IDEA governs how states and public agencies provide early intervention, special education, and related services to more than 6.5 million eligible infants, toddlers, children, and youth with disabilities. Infants and toddlers with disabilities (birth-2), and their families receive early intervention services under IDEA Part C. Children and youth (ages 3-21) receive special education and related services under IDEA Part B (IDEA, 2004).<sup>1</sup>

### **Individualized Education Plan (IEP)**

Under the Individuals with Disabilities Education Act (*IDEA*) each public school receiving special education services must have an Individualized Education Plan (IEP). Every IEP is designed for one student and must be an individualized document. The IEP creates opportunities for teachers, school administrators, parents, service personnel, and students to work together to improve educational results for those with disabilities (IEP, 2007).

### **Socioeconomic Status**

Socioeconomic status is the social standing or class of an individual or group. It is often measured as a combination of education, income, and occupation. Socioeconomic status frequently reveals inadequacies in access to resources, privilege, power, and control (American Psychological Association, n.d.).

## **Vocational Education**

The 1990 *Perkins Act* defines vocational education as organized educational programs offering sequential courses directly related to the preparation of individuals in paid or unpaid employment in emerging or current occupations which may or may not require a baccalaureate or advanced degree (Key Questions, n.d.).

## **Vocational Education Specialists**

Vocational education specialists, or vocational counselors, help individuals understand their interests, capabilities, and set career goals. Vocational specialists help individuals determine their career options, interviewing clients to evaluate skills, work history, and personality. They match a client's education, experience, training and interests to available jobs. Often, they arrange for aptitude tests to help the client make career decisions.

Mentoring clients for interviews or arranging for training to help them develop marketable skills is another way vocational specialists help job seekers. Assisting with creating resume, keeping client records, and preparing reports and correspondence are additional job duties. Some specialize in working with people with mental or physical disabilities, clients referred by social service organizations or individuals who have difficulty in finding and keeping a job. In addition, vocational specialists provide support for individuals in times of job loss or layoffs (Hendricks, 2010; Taylor et al., 2013).

## **Vocational Education Training**

It is assumed that VET will assist individuals with disabilities to prepare for, obtain, and maintain employment. All recipients eligible for VET will have physical or mental impairments that constitute or results in a substantial barrier to employment. Presumably each VET program will be similar by (Wehman et al., 2016):

- Assessing individualized vocational needs to determine one's capabilities and interests.
- Developing an individualized plan for employment that outlines one's personalized goals, and the support services needed.
- Post vocational services to help maintain employment.

## **Chapter I Summary**

The annual prevalence of ASD is becoming increasingly common (Disability Status Report Florida, 2015). Traditionally, research has been devoted to early intervention for individuals with ASD, with a lack of emphasis examining the outcomes of adults as they reach employment age (Walsh et al., 2014). This is problematic as research indicates that post-secondary employment opportunities for individuals with ASD are limited, and that these individuals experience some of the lowest employment rates amongst the disabled (Walsh et al., 2014). Studies have demonstrated that employment opportunities positively impact the quality of life, cognitive function, and wellbeing amongst those with ASD (Walsh et al., 2014).

Limited employment opportunities may be the result of deficits in social and communicative functions experienced by individuals with ASD. These challenges may create difficulty in obtaining and maintaining employment for those with ASD long term (Walsh et al., 2014).

Current VET programs often fail to incorporate social and behavioral strategies for schools and the employer to ensure employment opportunities. This study will investigate what business and community owners need in terms of training, in addition to what special educators believe is necessary to create an effective curriculum to teach students with ASD.

## **CHAPTER II**

### **LITERATURE REVIEW**

Students with ASD are frequently overlooked for employment opportunities (Hendricks, 2010). Current curriculums targeting students with ASD are only vocational in nature, and lack social, emotional, and behavioral components (Hendricks, 2010). The aim of VET is for participants with disabilities to develop self-awareness skills, to be informed about the educational system, studies, vocations, and socio-economic life. Despite this knowledge, those with ASD frequently remain unemployed, indirectly affecting their quality of life and wellbeing. Unemployment rate for people with disabilities was nearly three times the jobless rate in South Florida (Disability Status Report Florida, 2015). Students with ASD are behind typical students in employment opportunities. By developing an employment-training program that matches the needs of employers within the community it is the hope of this research to provide the ability of individuals with ASD to obtain and maintain employment.

#### **Employment Difficulties**

ASD is a subset of neurodevelopmental disorder defined by impairments in social interaction, and communication, and restricted and repetitive behavior. Autism is recognized as a permanent neurodevelopmental disability progressing into adulthood, creating lifelong challenges for the individual (Hendricks, 2010). Despite the growing annual prevalence of ASD, little is known on how to best provide postsecondary services once employed (Hendricks, 2010).

There are many positive aspects of hiring someone with ASD in the workplace, such as increasing productivity and social interaction. In Australia a survey was conducted with 250 organizations in which include 59 employers of adults with ASD. 51% of business recruited individuals with ASD through disability employment service (DES), while 49% of businesses recruited independently (Scott et al., 2017). Results showed that over 51% revealed of having

friendly exchanges between employees with and without ASD, 10% of these conversations were only relating work and greetings between employee with ASD and co-workers (Scott et al., 2017).

The ability to acquire and maintaining employment is challenging for any person, however is especially complicated for those with ASD due to impairments in social functioning, communication, and executive functions (Taylor et al., 2013). Achieving one's desired occupation is conceivably the primary aspiration entering postsecondary years. Traditionally, postsecondary employment has been restricted for those with ASD. With employment outcomes constantly receive increasing national recognition and the expanding number of adults with ASD, there continues to be a persistent disconnect between provided secondary educational services and employability skillsets facilitating successful employment in the years after graduation (Hendricks, 2010; Taylor et al., 2013).

Most individuals with ASD attribute their job difficulties to the social demands of the work environment, rather than the job itself. The inability to grasp certain social demands within the workplace is speculated to be the most challenging obstacle for vocational success (Guide to the IEP, 2007). Current vocational programs fail to incorporate behavioral strategies into their program, leading to impaired social and behavioral interactions within the workplace. Teachers and employers should identify suitable jobs to the individual's intellectual and educational needs that correspond to their individualized social and behavioral capability (Guide to the IEP, 2007).

The lack of long-term support services for those with ASD is thought to contribute to those with ASD ability to maintain employment (Hendricks, 2010). Those with ASD may need continuous external support for employment success (Hendricks, 2010). Workers with ASD may need ongoing services to prevent later deterioration in vocational performance, leading to future

employment failures (Hendricks, 2010). Current long-term support services fail to address difficulties in social interaction or individualized counseling services, which focus on developing and maintaining coping strategies in the workplace (Hendricks, 2010). External support services include routine follow-up and monitoring by employment staff, and may even extend beyond the workday, as daily factors may potentially influence job performance (Hendricks, 2010).

Weham et al., 2016 researched the increasing prevalence of children with ASD and the correlation in the need of competitive integrating employment (CIE) (Weham et al., 2016). The study examines 64 individuals with ASD who participated in the “state vocational rehabilitation service agency” from 2009-2014 (Weham et al., 2016). The study concludes with the success rate of the program, 98.4 of participants were able to secure CIE, of which 77% never have worked before (Weham et al., 2016). This demonstrates the effectiveness of a VET program.

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To demonstrate the efficacy of supported employment, Wehman et al., 2012 assessed existing supported employment opportunities for individuals with ASD, and the effects it has on employment. The study involved 33 participants with ASD who participated in employment training (Wehman et al., 2012). Participant received a one-to-one vocational specialist, who guided and supported them throughout the research period. The study demonstrated that after vocational training was completed, 27 out of 33 participants obtained competitive employment (Wehman et al., 2012). Wehman et al., 2012 also showed that individualizing vocational strategies with a one-one-employment specialist was an effective strategy (Wehman et al., 2013).

Barneveld et al., 2014 examined the long-term outcomes in individuals with ASD by studying quality of life (QoL) in young adulthood in comparison with other child psychiatric disorders. The study examined 169 individuals with ASD, and was contrasted to the QoL of adults with attention deficit hyperactivity disorder (Barneveld et al., 2014). QoL was evaluated by assessing marital status, level of education, employment, living arrangements, social relationships, and usage of mental healthcare (Barneveld et al., 2014).

The results demonstrated that adults with ASD had lower educational levels, fewer paid employment opportunities, more social security recipients, in comparison to the other psychiatric participants (Barneveld et al., 2014). Adults with ASD were found to be less satisfied about their work or education, partner relationship, and future perspective than the other groups cognitively disabled (Barneveld et al., 2014).

**Interactional impairments.** Individuals with ASD possess distinct vocational needs in comparison to those with other developmental disabilities. Each person with ASD demonstrates a set of unique characteristics, which that can make the preparation of employment problematic (Hendricks, 2010). Social impairments account for the largest vocational impact (Taylor et al., 2012). Social impairments typically involve inadequate hygiene or grooming, the inability to follow social rules and to work alone, and inappropriate sexual behavior (Dissanayake, 2013; Kellaher, 2015). Individuals with ASD frequently interrupt others when working or talking. They also may have difficulty with listening and making eye contact while talking to a co-worker or employer (Walls et al., 2009). Another challenge is understanding the body language of others and non-verbal inferences (Walls et al., 2009).

Cognitive impairments are known to be reduced in individuals with ASD, indirectly affecting job performance. Impairments in executive function may hinder their working

memory, completing tasks, and acclimating to a new work environment (Kiep & Spek, 2016). Although ASD is a spectrum some extreme examples may entail behavioral impairments may involve tantrums, aggression leading to self-harm, ritualistic behavior, or oral fixation. These characteristics are often misinterpreted, and not well tolerated in the workplace, leading to discrimination and unemployment indirectly (Dissanayake, 2013; Healy & Brett, 2014; Hendricks, 2010).

### **State of Employment**

As Florida prepares for the retirement of baby boomers in 2030, it will call for the mobilization of over 2 million jobs (Parrish, 2016). One group within the workforce that could help fill the gaps left as workers leave the workforce over the next few years for retirement are those with ADS who desire to work (Parrish, 2016).

It is estimated that 50-75% of adults with ASD are unemployed nationally according to approximations from CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network (Christensen et al., 2016). During 2014 the annual unemployment rate in Florida was 6.3% (Parrish, 2016). While there are over 1.3 million Floridians with disabilities, 62.9% of Floridians with disabilities are unemployed (Parrish, 2016)

**A Large Urban County in South Florida.** Among those cogitatively disabled, 23.7% are employed as categorized by the U.S. Bureau of Labor Statistics. Using data provided by the U.S. Census Bureau, in 2014 The American Community Survey (ACS) determined the unemployment rate for non-disabled, and disabled for Florida's 40 most populated counties. In a large urban county in South Florida these rates were 5.9% and 17.8% respectfully (Parrish, 2016). Among those with cognitive difficulty over the age of 18 in a large urban county in South Florida, 6,213 individuals were employed, and 3,000 individuals were unemployed. 18,538

people with cognitive difficulty did not contribute to the labor force in a large urban county in South Florida (Parrish, 2016).

The Florida Department of Education PK-20 determined the graduation rates among disabled and non-disabled in a large urban county in south Florida to be 59.6% and 80.4% respectfully (Parrish, 2016). In addition to the considerably higher unemployment rate for Floridians with disabilities, the variability in rates across counties is substantially higher for those cognitively disabled in comparison to the overall rate (Parrish, 2016).

**Employment Perspectives.** The necessity to support individuals with ASD in obtaining and maintaining employment is widely recognized. Despite high levels of skills and the desire to work, individuals with ASD continue to remain unemployed and underemployed (Scott et al., 2015). Managers are seeking individuals with ASD as job candidates because of their focus and creativity they bring to the workplace.

In 2015 a study was conducted to examine the viewpoints of employers and individuals with ASD in regards to successful employment (Scott et al., 2015). Their findings included differences in understanding the type of workplace support, job expectations, and productivity requirements (Scott et al., 2015).

Individuals with ASD demonstrate above average level in relation to attention to detail, quality of work and work ethic. They perform below standard level in regards to following instructions and flexibility at the workplace. A study by Drexel University found that many individuals with ASD are not only unemployed, but have the skills that many businesses are looking for (Lam, 2016). Individuals with ASD pay attention to details, which would aid in data analysis and mathematical concepts. Additionally, individuals with ASD have the capability to concentrate over longer periods of time (Lam, 2016).

**Employer Viewpoints.** Scott et al., 2015 found that employers were open-minded in regards to employing adults with ASD in their workplace, viewing working as an important factor in increasing life satisfaction (Scott et al., 2015). Employers felt more confident employing those with ASD when receiving ongoing support from disability services (Scott et al., 2015). Employers sought to increase employment success by providing on the job training, explaining the workplace and culture, and encourages effective communication skills. Employers also encourage teamwork, as managers promote fair workplace, and provided routine feedback (Scott et al., 2015). Other employer expectations required employees to have an understanding of job expectations to ensure productivity, the ability to work as a team, and engage socially.

### **Vocational Education Training**

The primary goal of VET is to provide support services to those with disabilities by allowing them to prepare for, accessing, obtaining, maintaining, and regaining employment (Hendricks, 2010). Vocational coursework instructs widespread labor market preparation by teaching general employment skills, rather than preparing students for employment in a specific occupation (Hendricks, 2010).

Among those with ASD, vocational and transitional services will enable adults to become independent, and become productive members of society (Tomblin & Haring, 1999). Despite the advantages of VET providing pre-employment skillsets, individuals with ASD will each require unique and individualized instruction to attain the relevant competencies related to the special needs of the student (Tomblin & Haring, 1999). Difficulty arises when implementing VET training for a wide variety of individuals with ASD, as VET programs target a specific amount of people (Dayuan, 2006). If implemented correctly various components of VET will gradually

reduce the gap between general basic pre-employment skills of those with ASD, and the desired labor force skills of the employer. The current VET program components are illustrated in Figure 1.

**Components.** Guidance through supported employment is necessary for successful employment (Tomblin & Haring, 1999). By providing on-the-job support services, employment opportunities (*i.e.* permanent employment and salaries) for individuals with ASD increase substantially. Previous research elucidated that recommendations for vocational support services can be ascertained into five themes (Tomblin & Haring, 1999; Hendricks, 2010; Scott et al., 2015; Lam, 2016):

- 1) Job placement
- 2) Supervisors and co-workers
- 3) On the job training
- 4) Modifications of workplace
- 5) Long-term support

**Job Placement.** Ensuring an appropriate job match is perhaps most impactful when dealing with successful job placement (Hendricks, 2010). Vocational education specialists and employers must identify appropriate jobs to the individual's intellectual and educational background that corresponds to their social and behavioral capability (Hendricks, 2010). Job placement should consider the job description and necessary tasks involved instead of the type of working environment (Scott et al., 2015). Various work tasks should be adapted into areas with minimal distractions. In retrospect, new employees should require minimal social skills, extended time for learning, and excluded from excessive sensorimotor stimulation (Lam, 2016).

**Supervisors and Co-Workers.** Appropriate knowledge of ASD as well as appropriate support services are essential prerequisites for employing individuals with ASD. Employers and co-workers should provide a comfortable working environment, as this is often contingent upon successful employment (Hendricks, 2010). Retaining employment will require flexibility and tolerance of supervisors and co-workers when interacting with an employee with ASD.

Additionally, modification to job responsibilities or work setting, assistance with communication exchange and social interaction will be presumably required (Hendricks, 2010).

**One the Job Training.** Individuals with ASD have the capability of working in a variety of industries (Scott et al., 2015). Extensive specialized instructional training may be needed to facilitate job tasks, and other skills related to employment (Hendricks, 2010). These may include interpersonal skills, communication, and the management of repetitive behavior. As each person with ASD possesses a unique learning profile, onsite training may be most beneficial, allowing for learning to be conducted in the natural work setting (Hendricks, 2010). Support programs emphasizing on the job training targeting specific job skills will allow acclimatization into the occupation, and social integration (Tomblin & Haring, 1999).

**Modifications in the Workplace.** In addition to learning occupational skills, workers with ASD will require workplace adaptations and modifications. Various strategies will enhance suitability for the employee by adapting workplace areas, and tasks (Lam, 2016). These individuals will require modulating sensory input, as environmental stimuli may be a distraction (Hendricks, 2010). Employees with ASD will benefit from a clear and concise work schedule that may ultimately require restructuring job duties in a way that appropriate to their individualized needs. A defined work schedule (*i.e.* instruction sheets, notebooks, labels, and checklists) will also increase job predictability (Hendricks, 2010). Adaptations to break time

also require appropriate modification. These alternatives include taking a walk or playing an electronic game to reduce the amount of unstructured down time (Hendricks, 2010).

**Long-term Support.** As one becomes more familiarized with their roles and responsibilities within the workplace, individualized training provided by the employer should be systematically, and slowly lessened over time (Parrish, 2016). Employees with ASD may require extended support, or vocational education workshops to prevent a future decline in workplace performance, eventually leading to employment failure (Hendricks, 2010). Long-term support services are essential to this group as unexpected changes can be disruptive. Individuals may also require external support services extending beyond the workday that could influence job performance. Individualized counseling services identify difficulties outside of the workplace and focus on developing appropriate individualized coping strategies inside and outside of work (Hendricks, 2010).

### **Current Vocational Education Programs**

Although public, community, and privately owned VET programs are being implemented throughout the United States, to facilitate transitioning from high school into the workforce, program availability varies from state to state. The components of each VET program typically vary depending on its individualized goal, primarily focusing on particular educational strategies. Unfortunately, schools and communities frequently remain unequipped and have inadequate support services for individuals with ASD. Despite VET programs being efficacious, there remains a disparity between the number programs available to students with ASD and their unemployment rate.

Articles were identified from the following databases: ERIC, EBSCO, iSeek, and ResearchGate. The search was limited to articles in English published from 1980 – July 2017.

The following keywords were searched: autism spectrum disorder, vocational education training, transitional programs unemployment rate, and secondary education. Abstracts were reviewed to identify articles that assessed the usage of VET amongst ASD.

To ensure complete detection of all relevant studies, articles were cross-referenced from the bibliography. After reviewing each article, studies were selected that met the following inclusion criteria: the usage of VET or transitional services amongst students with ASD. Studies that were excluded included other neurocognitive disorders and disabilities, and that occurred in elementary school settings. VET programs were evaluated by comparing the aim the methodology of implementation. A total of nine relevant VET programs associated with ASD were identified as shown in Table 6. Effective VET as seen in Project SEARCH and data from the National Longitudinal Transition Study-2 (NLTS2) will be discussed in greater detail.

**Project SEARCH.** In 2016, Virginia Commonwealth University created a 9-month internship for high school seniors with ASD to establish employability skills, and potentially obtain employment. A total of 31 ASD students ages 18-21 enrolled in the program called Project SEARCH plus Autism Spectrum Disorder Supports (Wehman et al., 2013). Project SEARCH participants were compared to 18 of their peers with ASD not enrolled in a VET program. Throughout the internship senior year participants spent time in community establishments (*i.e.* grocery stores, retail, and hospitals) where they received on the job training instead of class work time (Wehman et al., 2013). To overcome social and behavioral challenges experienced throughout the internship, Project SEARCH incorporated the usage of applied behavior analysis to direct these issues (Wehman et al., 2013).

Of the students completing the high school internship in comparison to the group who did not participate in VET, Project SEARCH participants not only obtained, and maintained

employment after high school graduation, but also received increases in hourly wage (\$9.53–\$10.66 per hour) (Wehman et al., 2013). Non-Project SEARCH participants found it difficult to obtain work, and earned less than \$1.00 per hour (Wehman et al., 2013). Wehman et al., 2016 also determined that approximately 87% of Project SEARCH participants maintained employment 12 months after high school graduation, while only 12% in the control group sustained employment 12 months post-graduation (Wehman et al., 2013).

**National Longitudinal Transition Study.** In 2009 the Department of Education released data from the NLTS-2. The sample consisted of students ages 13-16 as they transitioned from high school into adulthood. Wehman et al., 2014 determined that from the NLTS-2 survey, students with ASD averaged of 28.2 high school credits higher than other disabled groups, and double the number of credits of those disabled with non-VET enrollment (Wehman et al., 2014). Figure 2 indicates that of the overall high school credits earned, students with ASD are replacing academic credit in replacement of nonacademic credit (Wehman et al., 2014).

Students with ASD participated in less general education classes compared to their peers without disabilities (Wehman et al., 2016). Approximately 27% of students with ASD fail at least one graded course, compared to 40%-77% of other disabilities as demonstrated in Figure 2.

It's unusual that academically motivated students with ASD find it difficult in social and communication skills. The data compiled from the NLT-2 survey demonstrates a clear disconnect that high school curriculums are underprepared for life post-graduation.

**Project ACCESS.** Project ACCESS, which stands for Assimilation to Community, Careers, Education and Self-Sufficiency is a VET program created by transitional services at the Palm Beach County school district's Exceptional Student Education department. The program

aids students with disabilities up to ages 22 while they are continuing their education and graduating with a special diploma. The program is offered to students in an age appropriate environment to make it easily accessible by incorporating services in high school to facilitate the transition into college or the workplace.

Jim Dack, a vocational specialist and valuable member of ACCESS has emphasized the positive impact that the program has taught young adults with disabilities. He currently teaches them independency and employability skills to enhance their wellbeing and to live an autonomous lifestyle. A semi-structured interview was conducted with Mr. Dack in July, 2017 in order to assess the strengths and weaknesses of current VET programs in South Florida.

Mr. Dack stated that the concerns currently being encountered are when students age out of the program. There are limited appropriate post-programs that continue supporting individuals with disabilities after the age of 22 in order to maintain employment and grow within the professional environment. There is a great need of continuous support, social skills training, and residential living facilities to help individuals with disabilities maintain their independency and live a fulfilling life.

### **Vocational Education Training Limitation Strategies**

To overcome the limitations of vocational education in need for employment, placement must be individualized based upon one's strengths, and interests (Hendricks, 2010). Job placement skills now cover searching, and identifying appropriate jobs, and preparing resumes and interviews. Businesses have now begun implementing formative assessments to evaluate if one could perform well, work habits, and the need for further development (Hendricks, 2010). Staff and co-workers must participate in informal training emphasizing how to interact socially with those with ASD to maximize social integration.

For on the job training, research has supported the use of strategies including video modeling, errorless learning, graduated guidance, and system of prompts. Innovations in technology enable workers to view step-by-step pictures in conjunction with auditory instruction on screen at their own pace (Dissanayake, 2013; Hendricks, 2010). To assess workplace modifications, employment programs should incorporate environmental assessments to identify distractions. Long-term support services should be indefinitely through the use of provisional of site visits, phone calls to the employer, and contact with family members or residential staff (Tomblin & Haring, 1999).

Despite these limitations there is a substantial need for the evaluation of the methods of implementation, and evaluation in the workplace (Hendricks, 2010). When hiring one with ASD, employers must consider one's unique interactional characteristics, as well as specific interests. Carefully matching one's abilities to the appropriate work environment, coupled with the proper support services, can ensure one's successful and ongoing employment.

### **Community Programs in Florida for Adults and Adults with Autism**

As the annual prevalence of ASD increases annually state and local governments struggle to provide educational services, which meet the pervasive needs of children with ASD. However, the intensity and quality of services recommended is often difficult to provide due to financial constraints (Stahmer, 2007). Public programs have faced criticism and legal action from families concerned that their children were not receiving appropriate service (Stahmer, 2007).

While one specific treatment has not emerged several methods have been demonstrated to be efficacious (Stahmer, 2007). These methods focus on specific behaviors while other interventions are comprehensive in nature (Stahmer, 2007). Many barriers to translating

evidence based practices into community settings exist, which include limited opportunities for training, a lack of autism-specific support, large caseloads, and low-program intensity (Stahmer, 2007).

Autism researchers have identified common effective practice elements, which cross many supported treatment methods related to employment. Elements typically agreed upon include (Stahmer, 2007):

1. The earliest possible start to treatment
2. High-treatment intensity (20-30 hours per week)
3. Ongoing, systematic assessment, which leads to intervention choices
4. Strategies to promote generalization of learned skills
5. Structured environment with a predictable routine
6. High levels of staff education and training
7. Active and sustained engagement of the child
8. Individualized treatment programs designed to meet a child's needs
9. Specific curriculum content with a focus on communication, social/play skills, cognitive, self help, and behavioral issues
10. High parent involvement

### **Limitations of Community Programs in Florida for Young Adults with Autism**

There is currently a lack of community VET programs for individuals with ASD, 13 of which are identified in Table 7. With this increase in prevalence has come an increase in the need for effective services for adults with ASD (Autism Speaks, 2014). The need continues to far exceed the available resources, leaving a generation of people with ASD and their families in a financial and personal limbo (Autism Speaks, 2014).

In order for adults with ASD to have the services they need, resources must be available and policy must be amended to ensure that individuals with ASD have access to services, and supports to meet their needs (Autism Speaks, 2014). Figure 3 illustrates barriers to receiving outside support services, such as a lack of funding or resources or a lack of qualified staff (Autism Speaks, 2014).

Many conclusions were determined from the over 10,000 responses that came in for the National Housing and Residential Supports Survey. The overarching theme was a significant need for more housing and residential supports options for the ASD community. With an estimated 500,000 individuals with ASD entering adulthood in the next decade, this need will surely continue to increase in the years to come (Autism Speaks, 2014).

### **Parental Education to Partnership Education**

Families have a critical impact on the successful transition from school to adult life for young adults with disabilities (Morningstar et al., 1995). A families influence of career aspirations is not new, however it is the predominant means by which these students have begun to develop a career vision (Turnbull & Ruef, 1997). Students with ASD who do not have the opportunities to learn to plan and manage their lives will leave school without the skills necessary to achieve positive adult outcomes. Literature has shown that one of the reasons for poor post-school outcomes is that students with disabilities leave school without self-determination (Turnbull et al., 1999).

It is important for special education leaders from across the age span to collaborate in the development of family-student-school partnership models disabilities (Morningstar et al., 1995; Turnbull & Ruef, 1997). From the earliest ages, these models need to incorporate a much stronger emphasis on self-determination in enhancing student's autonomy, even during early

childhood years to express their preferences for activities and to assess their strengths and needs disabilities (Morningstar et al., 1995). In particular, family roles need to be conceptualized to ensure that parents and extended family have opportunities to be collaborators with their child's decision making. Appropriate roles need to be delineated for students and families to experience self-determination at younger ages, and for families to be involved in supporting their son or daughter's autonomy in planning meetings at older stages (Morningstar et al., 1995; Turnbull & Turnbull, 2015).

### **Community Programs in a Large Urban County in South Florida**

Current career development and early work experiences are associated with improved post school employment outcomes for youth with disabilities, as current programs have transition personnel report having natural community partners to support and enhance these experiences (Carter et al., 2009). Carter et al., 2009 surveyed 135 chambers of commerce and other employer networks to examine:

- 1) Whether and how these networks have partnered previously with local high schools on 18 youth-focused career development activities
- 2) The extent to which they would consider such involvement to be feasible
- 3) The influence of disability status of youth on their response

Most chambers had limited previous involvement and their views and experiences were influenced by the disability status of youth (Carter et al., 2009). Employment is less likely to materialize when youth with disabilities lack meaningful career development and job experiences prior to exiting the school system. Special educators frequently cite both the perceived paucity of employers willing to hire youth with disabilities and limited relationships with local businesses as especially prominent barriers (Carter et al., 2009).

Additionally, employers may have limited awareness or understanding of the skills and strengths of youth with disabilities, purpose of special education transition programming and services, the available avenues for working with schools to support youth-focused career development activities, and the resources or assistance potentially available to them when they hire or work with youth (Carter et al., 2009). These barriers highlight the necessity of developing stronger and broader linkages between the local business community and high schools.

In addition to providing schools with additional partners and resources, research suggests that increasing the number of businesses and organizations that hire youth with disabilities may further improve employers attitude towards the willingness to employ these youth in the future (Carter et al., 2009).

Local chambers of commerce-association of business and organization purpose are to promote the economic interests of the local community (Carter et al., 2009). Chambers provide their members extensive networking opportunities, share economic forecast information with the community, and often contribute to a range of local civic and social issues.

## **Chapter II Summary**

Organizations have developed programs for vocational training for individuals with ASD. Current VET programs focus on developing employability skillsets when transitioning into the workplace. The literature review revealed that programs are enriched in counseling, guidance, and the continuous development of working skills (Delli et al., 2016). ASD affects verbal and nonverbal communication and social interaction (Delli et al., 2016). Current VET programs are limited as they lack social and behavioral components appropriate for one's individual needs.

## **CHAPTER III**

### **METHODOLOGY**

#### **Introduction**

There is limited usage of appropriate research-based vocational curriculums, and programs for individuals with ASD in Florida. This creates challenging relationships, and a lack of collaboration among parents, young adults with disabilities, and future employers (Mavromaras & Polidano, 2011). The feeling of hopelessness for young adults with ASD may be the result of unemployment, eventually leading to demotivation, and increased social and behavioral problems (Howlin, 2013; Gür et al., 2014).

#### **Statement of the Problem**

The problem is the lack of a structured curriculum for young adults with ASD in a large urban county in South Florida ages 18 and older. Research demonstrates VET is effective for students with ASD when performed correctly. Despite this knowledge there remains a gap between the efficacy of VET and the high unemployment rate in the state of Florida due to inadequacies in current curriculums, and the limited access to VET programs. Current VET programs primarily focus on the ability to accomplish job skillsets, without addressing underlying issue such as emotional, social, and behavioral deficits that would impair one's ability in the workplace.

Due to neurodevelopmental impairments individuals with ASD lack certain employment skill sets. Obtaining employment is difficult as they are often discriminated because of their disability (Hendricks, 2010). This study will analyze current employment outcomes and investigate the efficacy of current VET strategies used to obtain and maintain employment amongst individuals with ASD ages 18 and over in a large urban county in South Florida.

**Sub-Problems.** Current VET lacks continuing education to ensure participants can

maintain job competencies. Several unanswered questions remain in the development of a new VET program as demonstrated in Figure 6.

### **Rationale for Design**

Ongoing research and data should be collected prior to creating and completing the VET guide for employers. The goal of this study is to create an employer-training guide in regards to hiring individuals with ASD that will ensure long-term employability for all participants. The unemployment rate for people with disabilities is approximately three times the unemployment rate in South Florida (Disability Status Report Florida, 2015).

A structured program around individual with ASD needs and employers desire will increase the likelihood of employability and its maintenance long-term. VET will allow those with ASD to develop self-awareness, behavioral, and social skills within the workplace and personal lives. The goals for individuals with ASD after VET are shown in Figure 7.

**Sample.** Semi-structured interview questions will be conducted throughout a large urban county in South Florida.

**Population.** Vocational specialists will be asked to participate a semi-structured interview questionnaire via email or telephone based on their programs social and behavioral necessities for participants with ASD ages  $\geq 18$ .

Employers in South Florida who have previously hired individuals with ASD ages  $\geq 18$ , and that have participated in VET will be invited to participate in a similar emailed or telephone semi-structure interview questionnaire in order to provide their opinions when hiring and employing adults with ASD.

### **Description of Research Methodology**

Before this initiative will be conducted a research proposal will be presented to the Lynn

University Institutional Review Board (IRB) seeking approval for the review of research involving human subjects in a new project. Upon receiving permission from the Lynn University IRB the project will then be implemented. A systematic description of the research methodology is indicated in the subsequent paragraphs.

Survey methodology will be used sampling individuals from a population using semi-structured interview questions. Semi-structured interview questions will focus on different topics such as preferences, opinions, behavior, or factual information, depending on its purpose. The sample was chosen from a sampling frame, with all members of each group from a particular group of interest. The goal is not to describe the sample, but the larger population. Each member of the sample is referred to as a respondent. Semi-structured interview questions were administered via email, telephone, virtual (*i.e.* Skype), and in person.

This is a cross-sectional study as it describes certain characteristics of the population at one point in time. The environment in which the participants will find themselves will not be manipulated or altered. Interviews of employers and vocational education specialists will take place in natural settings. The answers of all the participants will be collected without the ability to influence the findings.

### **Data Collection**

A circular intended for wide distribution will be posted or distributed in business places, will initially be created for vocational education specialists and employers who hire young adults over the age of 18 with ASD in a large urban county in South Florida. The purpose of a circular is to recruit participants and ask them to participate in a research study. The circular is shown in Appendix A.

The circular will be displayed in various locations including residential, community, business areas, and children service councils. People interested in participating will call or email their contact information to schedule an appointment for the interview.

Additionally, the circular was emailed directly to 43 vocational education specialist, and 42 employers known to hire individuals with ASD ages  $\geq 18$  in a large urban county in South Florida asking for their participation.

Recruitment was completed when participant's responses became repetitive in comparison to their cohorts.

**Snowball Sampling.** Snowball sampling is where research participants refer other participants for a test or study (Yin, 2015). It is used where potential participants are difficult to find. Snowball sampling is a non-probability sampling method (Yin, 2015).

Snowball sampling consists of two steps (Yin, 2015):

1. Identify potential subjects in the population. Often, only one or two subjects can be found initially. Snowball sampling will be used for this study, as the word of mouth is necessary in order to gain access to multiple vocational specialists as well as employers. Vocational specialists often times know employers who hired clients of theirs. Therefore, the connections can be used to interview more participants. One person knows another person; the chain of connections will aid the study.
2. Ask those subjects if they can refer to other people in the field. Participants should be made aware that they do not have to provide any other names.

Their responses will directly contribute to the formation of a new program in the future. Emailed and telephoned semi-structured interview questions consisted of the same seven

questions, taking approximately 25 minutes in duration, and written specifically for each of the two groups as shown in Appendix C. Independent and dependent variables are listed in Table 9.

### **Instrumentation of Data Collection and Recording**

Prior to the semi-structured interview, each participant will be administered an informed consent form explaining the background and guidelines of the study as shown in Appendix B. Participants participating in the semi-structured interview via telephone, Skype, or in person will be made aware they are audio taped. Audio recordings will be gathered using two devices, an iPhone and iPad. Semi-structured interviews will then be manually transcribed into Microsoft Word. Microsoft Excel will be used to assign a coding category to words and phrases that were summarized from the participants' responses. Qualitative instruments used for data analysis are depicted in Table 10. All transcripts, emails, and semi-structured interview responses will be stored in a password-protected computer in the researcher's locked office for two years and then destroyed.

### **Summary of Vocational Education Specialist Recruitment and Semi-Structured Interview.**

- After IRB approval a circular will be distributed in community centers, offices, and grocery stores in South Florida asking for vocational education training specialists-to participate in a semi-structured interview. Appointments will be made with vocational specialists finding a convenient time and location for the participant.
- The circular will be emailed directly to 43 vocational education specialists asking for their participation.
- An informed consent will be provided that thoroughly discusses and notifies the participants about the overview and purpose of the study, the agreement that the participants will remain confidential at all times. Participants are allowed to exit the study at any time.

- Vocational education specialists wishing to take part in the semi-structured interview via telephone, Skype, or in person, will be audio recorded using two separate audio recorders. Responses to semi-structured interviews will be manually transcribed into Microsoft Word.
- All audio-taped interviews will be destroyed immediately after transcriptions are confirmed for accuracy by each interviewee. Transcriptions will be stored and locked away for two years. After the two years transcriptions will be destroyed.
- Vocational education specialists wishing to take part in the semi-structured interview via email will provide their response to the semi-structured interview questions to the researcher via email. All emails and responses to the semi-structured interview questions will be stored and locked for two years on the researchers computer. All emails and responses will then be deleted after two years.
- All participants will be asked to sign the informed consent and hand it to the interviewer. Signed consent forms will be kept in a locked cabinet in the researcher's office in a separate location from the transcription. The consent forms will be destroyed after two years.
- The participants will be notified that the interview will take approximately 25 minutes.

#### **Summary of Employer Recruitment and Semi-Structured Interview.**

- After IRB approval a circular will be distributed in community centers, offices, and grocery stores in South Florida asking for employers of Autism to participate in a semi-structured interview. Appointments will be made with employers of ASD finding a convenient time and location for the participant.
- The circular will be emailed directly to 42 known employers of ASD asking for their participation.
- An informed consent will be provided that thoroughly discusses and notifies the participants

about the overview and purpose of the study, the agreement that the participants will remain confidential at all times. Participants are allowed to exit the study at any time.

- Vocational education specialists wishing to take part in the semi-structured interview via telephone, Skype, or in person, will be audio recorded using two separate audio recorders. Responses to semi-structured interviews will be manually transcribed into Microsoft Word.
- All audio-taped interviews will be destroyed immediately after transcriptions are confirmed for accuracy by each interviewee. Transcriptions will be stored and locked away for two years. After the two years transcriptions will be destroyed.
- Employers wishing to take part in the semi-structured interview via email will provide their response to the semi-structured interview questions to the researcher via email. All emails and responses to the semi-structured interview questions will be stored and locked for two years on the researchers computer. All emails and responses will then be deleted after two years.
- All participants will be asked to sign the informed consent and hand it to the interviewer. Signed consent forms will be kept in a locked cabinet in the researcher's office in a separate location from the transcription. The consent forms will be destroyed after two years.
- The participants will be notified that the interview will take approximately 25 minutes.

**Confidentiality.** No names will be revealed at any time throughout the study.

Participants will be identified as Vocational Specialist #1, Vocational Specialist #2, etc., as well as Employer #1, Employer #2, etc. The participant's organizations and or businesses will not be exposed and will remain anonymous at all times. No student names will be used.

**Risks.** Risks in this study will be minimal and will involve loss of time due to the interview process.

**Benefits.** The participants can voice their opinion and concerns in regards to the current vocational education curriculums. Participants may enjoy explaining their ideas for a program, curriculum, or assistance. The participant's responses will have an influence on the development of a future vocational education training program.

### **Data Processing and Analysis**

After completion of the interview participant's responses were manually transcribed into Microsoft Word. Transcribed responses were then analyzed and coded into reoccurring themes.

**Interview Transcription.** Interview transcription is a word-to-word written documentation of a taped or live interview. Tapes need to be played and replayed to get the exact information one is looking for. Transcribed copies allow easy lookup for the desired information. A written transcript is also important to identify key topics discussed in an interview (Yin, 2015).

**Coding.** All responses obtained from vocational specialists and employers of ASD will be analyzed and coded. Coding is a process of organizing and sorting data (St. Pierre & Jackson 2014). Coding involves assigning a word, phrase, number, or symbol to each coding category (St. Pierre, & Jackson 2014). One will go through all textual data (*i.e.* interview transcripts, direct notes, field observations, etc.) in a systematic way (St. Pierre & Jackson 2014). The ideas, concepts, and themes are coded to fit the categories. Afterwards, the codes produced will be placed into recurring themes.

### **Methodological Assumptions**

The interviews will assist in determining the efficacy of current VET programs, and where emphasis should be focused to need within the workplace. The expectation of the use of a vocational employer based guide is the enhancement of positive contributions of those with ASD

in society. By integrating people with ASD into the workforce helps them assimilate into society and lead a positive and purposeful life. In addition, this helps the participant's family, improves, and de-stresses their interrelationships (Geller & Greenberg, 2009; Hart et al., 2010).

Young adults with disabilities graduating from high school or exiting the school system regress over time when they do not find employment (Carr, 2014). It is claimed that for a person with ASD the overall quality of life is impacted (*i.e.* autonomy, self-worth, and independence) and limited, especially after transitioning into early adulthood after high school (Carr, 2014). In addition, it is common for them to become depressed and develop feelings of hopelessness. This eventually leads to giving up on finding employment and eventually simply relying on social security or disability. This not only affects one's professional life but also their personal life as well (Tomblin & Haring, 2006).

The assumption is that when employers receive guidance in the hiring process of adults with ASD, it eliminates the employer's misconceptions about ASD. Also, when strategies and skills are provided for the employer to implement in the workplace, challenges such as behavioral and social deficits of adults with ASD may be diminished. Providing support and guidance for employers can increase the employment rate for individuals with ASD and create opportunity to obtain employment long-term employment.

**Limitations.** The study is limited to the number of vocational education specialists and employers interviewed. Additionally, the study is limited to the age of the students as it specifically targets students with ASD aged 18 and over. The study is also limited geographically to a large urban county in South Florida. Once the product would be complete and implemented in the workplace, it will initially be only implemented in the state of Florida.

The study will be limited in in how the data is collected and interpreted as it involves

semi-structured interview questions. As these interview questions are semi-structured, they often lead to subjectivity and bias. Participants may falsify their answers, as they may say what they think the researcher wants to hear.

**Delimitations.** Delimitations of the study include focusing on individuals with ASD aged 18 and over, as this age group is closest to transitioning from high school into adulthood. Due to the increasing annual prevalence ASD will be examined rather than other neurodevelopmental disorders. Store and department managers from grocery stores, department, and retail stores will be interviewed, as employment rates for individuals with ASD within these markets is greatest.

### **Chapter III Summary**

The current problem is the lack of a structured curriculum for individuals with ASD in a large urban county in South Florida ages 18 and older. The significance of this study is to create a VET guide for employers to enhance employability and long-term job retention. This will be accomplished by recruiting two groups of participants (vocational education specialists and employers of ASD) via a circular. Those willing to take part in the research initiative will be consented and will take part in a semi-structured interview where participants can express their opinion of current vocational education programs for individuals with ASD. Responses will be coded and separated into recurring themes. The data collected will be used to develop a new structured vocational guide to be used by employers to in order to better employment for adults with ASD in a large urban county in South Florida.

## CHAPTER IV MANUSCRIPTS

### **The Efficacy of Vocational Education Training Employability of Individuals with Autism Spectrum Disorder: An Integrated Literature Review**

#### **ABSTRACT**

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by impairments of two major domains: 1) deficits in social communication and social interaction and 2) restricted repetitive patterns of behavior, interests, and activities.<sup>1</sup> Sustained special education programs and behavior therapy can help children acquire self-care, social and job skills, and improve functioning while decreasing maladaptive behaviors.<sup>2</sup> Current curriculums targeting students with ASD are primarily vocational in nature, and lack social, emotional, and behavioral components.<sup>3</sup> The focus of vocational education training (VET) is for participants with disabilities to develop self-awareness, behavioral and social skills, autonomy, and to be informed about the educational system and socio-economic life. Despite the goals outlines by VET, there remains as discrepancy in employability as individuals with ASD are overlooked for employment.<sup>4</sup> The goal is to develop an employers vocational education training guide that addresses the necessities of participants, vocational specialist, and employers will be more prepared to provide individuals with ASD opportunities to obtain and maintain employment.<sup>3</sup>

In this paper a systematic literature review of VET programs was conducted pertaining to 3 components related to ASD: program components, employment rate, and wage. An electronic literature search was conducted from 1990 to August 2018, using ERIC, EBSCO, iSeek, and ResearchGate. A total of 12 VET programs were evaluated, 6 of which reported higher wages and employment rate.

## INTRODUCTION

Despite the growing annual prevalence of ASD within the primary and postsecondary educational system, little is known on how to best provide postsecondary services.<sup>3</sup> Acquiring and maintaining employment is challenging for any person, however, is particularly complicated for adolescence with ASD due to social functioning and communication impairments. With the increasing national recognition of the expanding number adolescents diagnosed with ASD, and the unemployment rate amongst disabled, there remains an ongoing disconnect between vocational services and employability skillsets that facilitate successful employment in the years after graduation.<sup>3, 5</sup>

Most individuals with ASD attribute their job difficulties to the social demands of the work environment, rather than the job itself. While the inability to grasp social and behavioral demands within the workplace is the most challenging obstacle for vocational success, current vocational programs fail to incorporate behavioral strategies into their program.<sup>6</sup> Ultimately this leads to impaired social and behavioral interactions within the workplace.<sup>6</sup>

The lack of long-term support services for those with ASD is thought to contribute to those with ASD ability to maintain employment.<sup>3</sup> Employees with ASD need ongoing support for employment success.<sup>3</sup> Long-term support services fail to address difficulties in social interaction or individualized counseling services, which focus on developing and maintaining coping strategies in the workplace.<sup>3, 5</sup> External ongoing support programs should include routine follow-up, and monitoring by employment staff, and may even extend beyond the workday, as daily factors may potentially influence job performance.<sup>6</sup>

### **Vocational Education Training**

The primary goal of vocational training is to provide support services for individuals with a disability by allowing them to prepare for employment as well as to, obtain, maintain, and retain employment.<sup>5</sup> Vocational training instructs a widespread labor market preparation by teaching general employment skills, rather than preparing students for employment in a specific occupation.<sup>3</sup>

Among those with ASD, vocational and transitional services enable adolescents to become independent and productive members of society.<sup>7</sup> Despite the advantages of VET providing pre-employment skillsets, individuals with ASD require unique and individualized instruction to attain the relevant competencies related to the special needs of the student.<sup>7</sup> If implemented correctly, VET will gradually reduce the gap between general basic pre-employment skills of those with ASD and the desired labor force skills of the employer. The current VET program components are illustrated in Figure 1.

Guidance through supported employment is necessary for successful employment.<sup>7</sup> Employment opportunities will increase substantially by providing on-the-job support services (*i.e.* permanent employment and salaries) for individuals with ASD. Previous research has determined that vocational support services are ascertained into five themes:<sup>3</sup>

- 1) Job placement
- 2) Supervisors and co-workers
- 3) On the job training
- 4) Modifications of workplace
- 5) Support long- term

## **METHODS**

Articles were identified from the following databases: ERIC, EBSCO, iSeek, and ResearchGate. The search was limited to articles in English published from 1990 to August 2018. The following key terms were searched: *Vocational education training, autism training program, autism employment programs, autism employment, and autism unemployment*. All abstracts were reviewed to identify the usage of VET for participants with ASD. To ensure complete detection of all relevant studies, all articles were cross-referenced from the bibliographies of the selected articles. After reviewing each article, studies were selected that met the following inclusion criteria: the usage of VET for individuals with ASD to obtain employment. The studies that were excluded that included other neurocognitive disorders and disabilities, and that occurred in elementary school settings. VET programs were evaluated using two measurements; employment rate upon completion of the VET program, and average wage.

## **RESULTS**

A total of 12 relevant current VET programs for individuals with ASD were discovered and reviewed as shown in Table 1. Of the 12 VET programs identified, 6 were further evaluated on the basis of wage, annual employment rate, and annual budget (Table 2).

### *Project SEARCH*

The Virginia Commonwealth University created a 9-month internship for high school seniors with ASD to establish employability skills, and potentially obtain employment. A total of 31 students with ASD ages 18-21 enrolled in the program called Project SEARCH plus Autism Spectrum Disorder Supports.<sup>8</sup> Project SEARCH participants were compared to 18 of their peers with ASD not enrolled in a VET program. Throughout the internship senior year,

participants spent time in community establishments (*i.e.* grocery stores, retail, and hospitals) where they received on the job training instead of class work time.<sup>8</sup> To overcome social and behavioral challenges experienced throughout the internship, Project SEARCH incorporated the usage of applied behavior analysis.<sup>8</sup>

Of the students completing the high school internship in comparison to the group who did not participate in VET, Project SEARCH participants not only obtained, and maintained employment after high school graduation, but also received increases in hourly wage (\$9.53–\$10.66 per hour).<sup>8</sup> Non-Project SEARCH participants found it difficult to obtain work and earned less than \$1.00 per hour.<sup>8</sup> It was determined that approximately 87% of Project SEARCH participants maintained employment past 12 months of high school graduation, while only 12% in the control group sustained employment 12 months post-graduation.<sup>8</sup> In 2012, the budget for one Project SEARCH site with 10 clients was estimated to be between \$133,881 and \$165,906 depending on the level of support needed.<sup>20</sup>

#### *Project SEARCH Bon Secours St. Mary's Hospital*

Among 206 internationally and nationally thriving sites of Project SEARCH, Bon Secours St. Mary's Hospital became one. Project SEARCH collaborated for Autism in the year of 2016. Yet, in 2006 it was determined that 60% of Bon Secours St. Mary's Hospital very first graduating class obtained competitive employment.<sup>9</sup> In 2012 100% of two of their graduating classes went on to obtain successful employment.<sup>9</sup> It was reported that the budget for Project SEARCH Bon Secours-St. Mary's hospital is readily available from Vocational Rehabilitation funding as well as, in-kind donations.<sup>9</sup>

*Princeton Child Development Institute: Life-Skills Program*

The Princeton Child Development Institute (PCDI) located in New, Jersey USA is a well-known behavioral intervention program. PCDI Adult Life-Skills Program is an employment model with additional services such as home and community-living skills. An array of skills are being taught in various settings (*i.e* community work places, recreation and entertainment facilities, the clients home, restaurants, etc).<sup>10</sup> The staff members at PCDI are professional life skill coaches. If an individual is not able to work outside of the home due to behavioral challenges or other health factors, PCDI staff creates paid job opportunities within the PCDI headquarters.<sup>10</sup>

PCDI's Adult Life-Skills Program entails creating an individual program for each client. The individualized program is based on specified measurements, data collection, graphs of student's performance, and inter-observer agreement data.<sup>11</sup> Individuals with ASD who took part in the program are holding job position such as, word-processing, data-entry jobs, housekeeping in hotels, and grounds maintenance at a local college. The program's success has demonstrated that the individuals with ASD have increased interdependence skills as well as social integration skills.

The program assessments demonstrated an overall employment rate of 73% of participants in the program.<sup>12</sup> In 2017 the U.S Department of Labor Survey reported that 75% of PCDI participants with disabilities are employed at least 20 hours per week. In 2017 the reported annual budget for PCDI was \$7,067,858.<sup>13</sup> This is an effective statistic compared to the statement of 2016 in which the U.S Department of Labor Survey stated that 82% of adults with disabilities are underemployed or unemployed.<sup>13</sup>

*Autism Center of Nebraska Connections*

Autism Center of Nebraska Connections (ACN) is a certified organization that caters to individuals with developmental disabilities (DD). ACN is under contract with the State of Nebraska Department of Health and Human Services, Division of Developmental Disabilities. ACN is specialized in ASD but has broadened their services to also adolescents and adults with DD.<sup>9</sup> The services focus on vocational, residential and educational criteria. The organization entails creating an individual profile of the client that integrated the client's employment preferences as well as needs and skill sets.

ACN connections works with employers and match the client's needs with the employers needs. The staff of ACN connections delivers long-term support to both the individual with ASD or DD, and the employer. The services cater to teaching social skills and job-specific skills, vocational planning, career planning, ongoing instructions, and support, especially of interpersonal relationships, as well as long-term support provided for the employer.<sup>9</sup> The annual budget of ACN connections in 2011 was estimated to be \$100,000. In 2012, 41 clients received services. Of the 41 clients, 76% found competitive employment, receiving wages from \$7.25 - \$10.58.<sup>9</sup>

*Autism Society of North Carolina (ASNC)*

In 1970 Autism Society of North Carolina (ASNC) began as a non-profit organization. In 1986 ASNC developed and launched their supported employment program. The organization advanced in 2007 and became a vendor for North Carolina Division of Vocational Rehabilitation for supported Employment. The program is designed for individuals with ASD who have the desire to work. The organization believes that by matching a client with a business or employer

in North Carolina saves a businesses money and time. ASNC collaborates and has strong relationships with local businesses.<sup>9</sup>

In 2010 the total annual operating budget of ASNC was \$700,335. The services provided involve individual workplace consultation and follow up meetings. Throughout the program supported employment services are provided with a team of therapists, case managers, and psychiatrists. The support and assistance are provided as long as the individual with ASD needs and wants. Of the 74 individuals with ASD who received services from ASNC, and 87% of the individuals with ASD found competitive employment. These participants received wages ranging from \$7.25-\$10.00 per hour.<sup>9</sup>

#### *TEACCH Supported Employment Program*

TEACCH Supported Employment Program was established in 1989. Skills as well as challenges amongst individuals with ASD are determined by community-based evaluations. The results of the evaluations then establish employment goals. Supported employment professionals then help individuals with ASD learn job search skills including learning, and practicing interview skills to find employment based on their skill set. Support over a long time span is provided, and personalized to the clients needs. Individual and group counseling is also offered to practice social and community skills. Job placement takes place in a variety of industries such as managerial, technical, service, sales, clerical, janitorial, and agricultural.<sup>12</sup>

Individuals with ASD earned wages from \$7.15 to \$18.00 an hour. The overall annual budget of the program is \$800,000.<sup>9</sup> In 2009, 31 individuals with ASD received services from TEACCH.<sup>14</sup> Of the 31 participants, 31 obtained competitive employment after completing the program.<sup>14</sup>

## **DISCUSSION**

Employment allows those with ASD to develop interpersonal, social, and communication skills.<sup>15</sup> Obtaining employment will not only fulfill their autonomy, self-confidence, and independence but will also increase their self-esteem long-term.<sup>16</sup> While organizations have developed programs and workshops for vocational training for individuals with ASD very few manage to find employment. This literature demonstrated that amongst the VET programs leading to successful employment few offer supported employment opportunities to acquire and improve job skills. Although current VET programs demonstrate that current teaching models are an object of ongoing investigation and renewal, they lack a customizable employment approach that is appropriate for one's individual needs.

Current VET programs focus on developing employability skillsets when transitioning into the workplace. The literature review revealed that programs are enriched in counseling, guidance, and the continuous development of working skills. ASD affects verbal and nonverbal communication, and social interaction. In addition to the VET program data collected in this review of literature it is evident that problems also lie within society itself. Therefore, implementing awareness, care, and acceptance into VET programs requires a joint effort. By removing the stigma attached to employed individuals with ASD will create equal opportunities for all its members to lead independent and autonomous lives.

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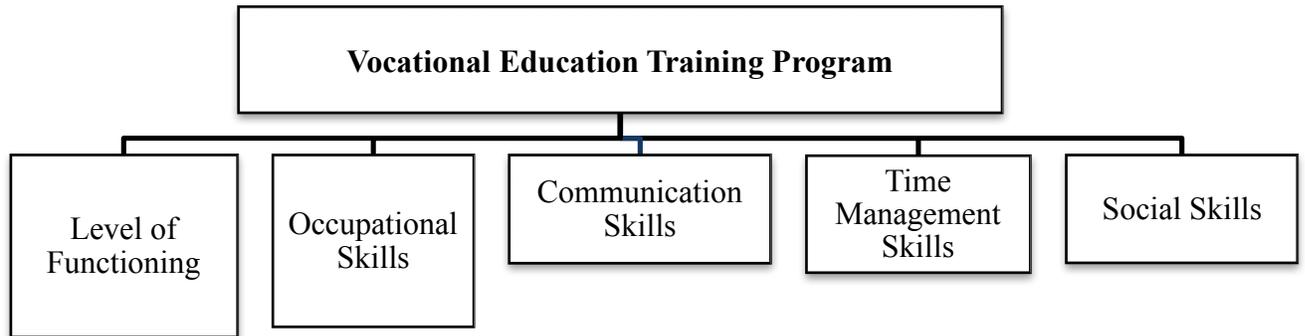
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**Supplemental Figures and Tables**

**Figure 1 (Vocational Education Training Program Components).** Vocational education training programs should address; level of functioning, occupational skills, communication skills, time management skills, and social skills.<sup>3</sup>



**Table 1 (Current Vocational Education Programs for Individuals with ASD).** Evaluation of current VET programs for individuals with ASD that include programs background, aim, and method of delivery.

<b>VET Programs</b>	<b>Background</b>	<b>Programs Aim</b>	<b>Method</b>	<b>Author</b>
Treatment and Education of Autistic Related Communication Handicapped Children (TEACCH)	Founded in 1989. Provides VET in centers for individuals with ASD in which the individuals receive long-term supported employment. 5-day workshop for anyone who is involved in the transition of individuals with ASD ( <i>i.e.</i> trainers, psychologists, professionals) to provide high-quality and intensive education on how to teach vocational, independent living and social skills.	Vocational skills Social skills Independent living skills	Training professionals on how to teach individuals with ASD vocational skills	Shea, 2013
Adult Life-Skills Program at Princeton Child Development Institute (PCDI)	Implemented since 1987. PCDI focuses on individual needs and assessments. Individual intervention planning takes place for each participant. The type of program that will be determined for the participant to follow will be based on the individual's daily routine, assessment of future work options, his/her interests and social partaking. PCDI provides life-skill coaches that incorporate life-long supportive counselors who accompany the	Vocational skills Communication Independent living skills	Working directly with individual adults with ASD	McClannahan et al., 2002

	participants to their employment.			
Pacific Autism Center for Education (PACE)	PACE implements a program, which provides vocational education training to adults with ASD. The training teaches vocational skills, independent living skills as well as skills that obtain inclusion in society. PACE provides individuals with ASD the opportunity to gain working experience through their practical experience in a working environment.	Independent living skills vocational skills	Works directly with adults with ASD	Syriopoulou-Delli, 2011
Life skills education for students with ASD and other pervasive behavioral challenges (LEAP)	A 12-month program that aims to teach functional skills to participants with ASD. LEAP offers services, which incorporate receiving services from speech language therapists, occupational therapist, counselors, etc. Extramural programs are offered to participants with ASD once they turn sixteen years old.	Functional skills Vocational skills	Lessons are provided individually or in groups for participants with ASD	Syriopoulou-Delli, 2011
Autism Society of Oregon (ASO)	Summer training for occupation is provided for children and adults. Regular workshops and seminars are provided for parents. ASO is in collaboration with organizations, enterprises, community services and agencies for the participants with	Vocational skills	Works directly with young adults and adults with ASD and their families	Syriopoulou-Delli, 2011

	ASD to find employment and be integrated into the community.			
Groden Network Vocational and Employment (GNVAE)	GNVAE is a vocational and employment program constructed to aid individuals with ASD from the age of fourteen and upwards. The program helps the participants to find their interests and teach working skills in combination to their interests. Once the participant with ASD demonstrates interest in a particular work of field, intensive vocational practical training will be provided.	Working Skills Social Skills	Works directly with individuals with ASD age 14 and upwards	Syriopoulou-Delli, 2011
Cove Center Program (CCP)	CCP aims are primarily social. Participants have to be employed (full time or part-time) to take part in the program. CCP evaluates and focuses on teaching appropriate behavior within the participant's workplace.	Social skills Behavior skills	Works directly with adults with ASD who are already employed	Syriopoulou-Delli, 2011
Autism Center for Excellence at Virginia Commonwealth	A supported employment model to help individuals with ASD through the employment process. Accommodations such as a job coaching to help find work, the participant being trained for the position, and to maintain employment. The goal	Vocational skills	Work directly with individuals with ASD who portray intrinsic motivation	Wehman et al., 2003

	is to find employment with competitive wages. The program emphasizes on the participants' self-determination, focusing on personal growth and development.			
Project Search	Cincinnati Children's Hospital Medical Center, Children's Emergency Department created Project SEARCH for the purpose to train people with developmental disabilities for entry-level positions within the department. Training for vocational skills provided for individuals with developmental disability throughout 300 sites across USA, Canada, England, Scotland, Ireland, and Australia.	Vocational on-site training	Work directly with individuals with a developmental disability	Wehman et al., 2013
Project Project SEARCH: Bon Secours St. Mary's Hospital	Bon Secours Richmond health system/ St. Mary's Hospital is part of Project SEARCH in Richmond, Virginia. This facility also integrates clinical research.	Marketable job skills General employability skills Customized Job-search assistance	Works directly with individuals with ASD	Sedl, 2013
Autism Center of Nebraska Connections (ACN)	The state of Nebraska has ACN as a provider specialized in providing services for individuals with ASD as well as for individuals with DD. The services are being provided to individual with ASD and DD ages 7-60. Clients are	Residential services, vocational services, pre-vocational services, educational services	ACN work directly with clients with Autism and DD.	Sedl, 2013

	referred to ACN by Nebraska Vocational Rehabilitation agency.			
Autism Society of North Carolina (ASNC)	In 1970 ASNC was created as a nonprofit organization. The organization works closely with other organizations in the community to develop more options for individuals with ASD. In addition, ASNC runs an effective supported employment program.	Provides customized workplace consultation, supported employment support by information, referral services, as well as advocacy for individuals with ASD	Employment specialists work with their team ( <i>i.e.</i> case managers, therapists, psychiatrists) directly with individuals with ASD	(Sedl, 2013)

**Table 2 (Vocational Education Program Employment Rate, Wage, and Annual Budget).**

<b>Program</b>	<b>Year</b>	<b>Employment Rate</b>	<b>Wage</b>	<b>Annual Budget</b>
Project SEARCH	2017	87%-88%	Average of \$9.20	\$133,881 - \$165,906 (Reported 2012)
Project SEARCH: Bon Secours St. Mary's	2012	100% (of the graduating classes)	\$7.25-\$10.00	Funded with VR funding, state funding and donations
Princeton Child Development Institute Life- Skills Program	2017	75% in 2017 73% in 2002	\$8.44-\$10.00	\$7,067,858 (Reported in 2013)
Autism Center of Nebraska Connections (ACN)	2012	76% (of the 41 clients)	\$7.25-\$10.85	\$100,000 (Reported in 2013)
Autism Society of North Carolina (ASNC)	2011	87% (of the 74 clients)	\$7.25-\$10.00	\$700,335 (Reported in 2010)
TEACCH Supported Employment Program	2009	100% (of the 31 clients)	\$7.15-\$18.00	\$800,000 (Reported in 2013)

## **An Evaluation of Current Vocational Education Training Programs Amongst Adults with Autism Spectrum Disorder in South Florida**

### **ABSTRACT**

Individuals with disabilities are an essential group when considering future employment, as they encompass a significant percentage of the current and projected population, while simultaneously represents a significantly underutilized section of the labor force. Adults with Autism spectrum disorder commonly struggle transitioning to adulthood, particularly with employment. Individuals with ASD have lower employment rates, or those who are employed hold jobs with lower earnings compared to their non-disabled co-workers. Despite the large unemployment rate for individuals with ASD, research has shown they are capable in working in occupations with proper ongoing vocational support.

Vocational education specialists and employers known to work with and employ individuals with ASD ages 18 and older in a large urban county in South Florida were invited to take part in a semi-structured interview via telephone and email. Participant's responses were transcribed, coded, and placed into reoccurring themes. Amongst vocational specialists, 29 codes were produced, and 4 reoccurring themes were developed from 117 respondents. From the 118 responses provided by employers of ASD, 21 codes were produced, and 3 reoccurring themes were created. This study provides direct evidence from validated professionals of the requirements need to improve current VET programs to enhance employment for individuals with ASD.

**Keywords:** *Adults with autism spectrum disorder (ASD), vocational education specialist, vocational education training (VET)*

## INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by impaired social interaction and communication, with restricted and repetitive behavior.<sup>1</sup> There has been a 14.6% increase in children diagnosed with ASD in the United States since 2000.<sup>2</sup> While individuals with ASD comprise a significant portion of our population, people with ASD are disproportionately absent from the labor force. The World Health Organization (WHO) has reported significantly lower levels of employment for people with all disabilities and considerably higher unemployment rates in the United States.<sup>3</sup> While employment disparities pertaining to disabilities have been present for years, an increase growing number of people with ASD attempt to enter the labor force. Workplaces must be prepared to accommodate these individuals by creating a disability inclusive culture.

According to the 2015 annual Disabilities Status Report 35.2% of working age people (age 21-64) with disabilities in the United States were employed, compared to 78.3% without disabilities.<sup>4</sup> Similarly the U. S. Bureau of Labor Statistics reported 31.0% of working age people (age 21-64) with disabilities in the state of Florida were employed, compared to 76.4% without disabilities as shown in Table 1.<sup>5</sup> The median household income of working-age people with disabilities in the United States was \$41,600, \$24,300 less than the \$65,900 median household income of non-disabled.<sup>5</sup>

The passage of the Workforce Innovation and Opportunity Act (WIOA) in 1998 created opportunities for career success for young adults with developmental disabilities, with a new emphasis on transitioning from school to employment.<sup>6</sup> Schools and Universities are attempting to overcome employment disparities by offering VET and IPSE's to those who may or may not be able to successfully obtain employment or formally pursue a college degree.<sup>6</sup> The U.S.

Department of Education has begun funding programs that support efforts to design and implement programs that invite individuals with ASD in their communities to enroll in vocational training or obtain higher education to improve their employment and educational opportunities.

Two categories of skills that have demonstrated positive outcomes are vocational skills and social skills.<sup>7</sup> Vocational skills involve daily living capabilities, and the ability to enhance autonomy in home and work environments.<sup>8</sup> Competencies within the workplace typically include literacy, numeracy, problem solving, critical thinking, task planning, organization, verbal communication, interpersonal skills, and ongoing learning.<sup>9</sup> Research has indicated that vocational training can be universal across job sites, however these skills must be socially validated in what is expected of individuals from the employer.<sup>10</sup> The development of these skills through VET will also depend on the cognitive ability and interest of the trainee. As more intensive support is required, additional resources will be necessary to help accommodate these employees to help adapt them in employment settings.<sup>11</sup>

Young adults with ASD struggle to find and maintain employment due to the lack of vocational skills, communicative, and behavioral impairments.<sup>12</sup> Research has demonstrated that young adults with ASD are capable of working in a variety of occupations with VET and ongoing support.<sup>13</sup> Current VET is not meeting the need of the ASD in the general population, and should address the specific individualized need of the participant.

Despite the identified challenges with VET and employment in young adults with ASD, vocational programs for this population are virtually non-existent.<sup>11</sup> Current VET programs primarily ascertained into five themes to assist in developing vocational skills, obtaining and maintaining competitive employment as shown in Figure 1.<sup>11</sup> As individuals with ASD typically

have underdeveloped vocational skills, with unique behavioral and social symptoms, they do not benefit from generalized VET, as traditional supportive services fail to meet their individual needs.<sup>14</sup> A distinct and individualized intervention to assist vocational skills for young adults with ASD is sorely needed.

*Research questions:*

- 1) What additional training resources are needed to support employees with ASD?
- 2) What importance do social skills have in maintaining employment for individuals with ASD?
- 3) What would assist employers in hiring individuals with ASD?

## **METHODS**

Case study design will be used sampling individuals from a population using semi-structured interview questions. Semi-structured interview questions will focus on different topics such as preferences, opinions, behavior, or factual information. The goal is not to describe the sample, but the larger population. Each member of the sample is referred to as a respondent. Semi-structured interview questions were administered via email, telephone, and in person.

Prior to this study being conducted a research proposal was be presented to the Lynn University Institutional Review Board (IRB) seeking approval for the review of research involving human subjects in a new project.

*Sample and Population*

The sample was chosen from a sampling frame, with all members of each group from a particular group of interest. A collection of semi-structured interview questions was conducted throughout a large urban county in South Florida. Vocational specialists were asked to participate a semi-structured interview questionnaire via email or telephone based on their programs social and behavioral necessities for participants with ASD ages 18 and older.

Employers in South Florida who have previously hired individuals with ASD ages 18 and older that have participated in VET were also invited to participate in a similar emailed or telephone semi-structure interview questionnaire to gauge their satisfaction and concerns when it comes to hiring and employing adults with ASD.

### *Data Collection*

Paper advertisement in the form of a circular intended for wide distribution posted or distributed in public places (*i.e.* community, and business areas, and children service councils) was created to recruit vocational education specialists and employers who work directly with adults ages 18 and older in a large urban county in South Florida. The circular was asking for their participation in the interview. In addition to the circular, participants were recruited using snowball sampling, where research participants can suggest or refer other participants in the same field to participate in the study. Recruitment via email and circular was completed when participant's responses to the semi-structured interview questionnaire became repetitive in comparison to their cohorts.

Participants that took part in the semi-structured interview questionnaire gave their views and concerns with current VET curriculums implemented in South Florida. Their responses will directly contribute to the formation of an employer-based vocational education guide. Emailed and telephoned semi-structured interview questions consisted of the same seven questions, taking approximately 30 minutes in duration, written specifically for each of the two groups.

### *Vocational Specialist Semi-structured Interview Questions*

1. What makes vocational education training successful for individuals with ASD to find employment?
2. Explain your experience with training students with ASD to be able to gain employment.

3. What aspect convinces you that individuals with ASD are capable of fulfilling employment responsibilities successfully?
4. Prior to obtaining employment what effective vocational education strategies do you implement to facilitate employment?
5. Over the year what has been the greatest challenges with vocational education training?
6. Which aspects need improvement and why?
7. Could you recommend an employer who you have had positive experiences with, in regards to hiring individuals with ASD?

*Employer Semi-structured Interview Questions*

1. What makes you different to other companies, in regards to employing individuals with ASD?
2. Are there advantages to having employees with ASD? Why?
3. How do you think the mindset could be changed of other companies who currently do not employ individuals with ASD?
4. How do you support your employees with ASD?
5. Would you wish you would have or receive more support from community partners in regards to your employees with ASD if so, how?
6. How often do you provide training to enhance their skills?
7. Would you give your employees with ASD a higher position if they would demonstrate growth in the work field? Why or why not?

### *Data Processing and Analysis*

After completion of the interview participant's responses were manually transcribed into Microsoft Word. Transcribed responses were then analyzed and coded into reoccurring themes. The methodological framework is illustrated in Figure 2.

The nature of the codes stuck very closely to the original responses, even reusing exact words in the original item, sometimes referred to as *in vivo* codes for all seven of the semi-structured interview questions.<sup>15</sup> Across each semi-structured interview questions codes were compared for similarity and commonalities.<sup>15</sup> A higher conceptual level of classification was then developed, as each code was placed into a specific category or recurring theme.<sup>15</sup>

## **RESULTS**

In order to assess the efficacy of current VET programs based on the opinions of vocational education specialists and employers of young adults with ASD in Florida, Table 2 reports the most common themes with the corresponding total number respondents for each interview question. A total of 85 participants were surveyed. The flyer was emailed to 43 vocational education specialist, and 42 employers known to hire individuals with ASD ages 18 and older in a large urban county South Florida. Among the 85 surveyed, 60 participated ( $n = 31$  vocational specialist and  $n = 30$  employers) via email, and 1 participated via telephone. The telephone semi-structure interview questionnaire was then transcribed directly into Microsoft Word. No participants initiated contacted using the flyer displayed in local businesses. All participant responses were categorized into multiple recurrent themes for each semi-structured interview question.

A total of seven semi-structured interview questions were asked to vocational specialists ( $n = 31$ ) who work directly with young adults with ASD ages 18 and over in a large urban

county in South Florida. From the 117 respondents, 29 codes were recorded, as seen in Table 2. From the 29 codes generated from the 7 semi-structured interview questions 4 themes were created. The most common reoccurring themes were autonomy (22), modeling (47), funding (33), and grocery store (15), which is shown graphically in Figure 3.

When asked what makes vocational education training successful for individuals with ASD to find employment it was stated that “video modeling is not only researched based, but its a positive support strategy”. From prior teaching experiences with young adults with ASD it was said, “in my organization we commonly use various types of modeling, such hands-on or video. From my past experience this has been a strategy to teach a wide array of skills”. When asked how does young adults fulfill employment responsibilities successfully, it was stated that “they are frequently overlooked because of a disability, however are more than capable of fulfilling entry level job requirements. The vast majority live independent lives.”

A total of seven semi-structured interview questions were asked to employers ( $n = 30$ ) who hire young adults with ASD ages 18 and older in a large urban county in South Florida. From the 118 respondents, 21 codes were recorded, as seen in Table 3. From the 21 codes that were produced, 3 recurring themes were created. The most common reoccurring themes amongst employers across each interview were equality (40), consistency (14), and training (64), demonstrated graphically in Figure 4. When employers of individuals with autism were asked what makes you different to other companies, in regards to employing individuals with ASD it was stated “we value and provide equal opportunities for all employees in our business.” “Our hiring process is non-bias. We do not discriminate against gender, race, or disability.” Employers were also asked how they support employees with ASD in their business. Employers said “We provide as much training and workshops as possible for all employees but sometimes

our training does not seem to work for everyone”, “We try to educate management and staff about autism the best we can.” Finally, when asked what qualities do individuals with ASD possess one employer noted “our employees who are autistic are always consistent, reliable and dependable. They come to work on time and demonstrate professionalism to our customers.”

## **DISCUSSION**

These research findings suggest that there is a disparity between equal opportunity and employers. Despite employers stating they are nondiscriminatory in their hiring process, data from the Bureau of Labor and Statistics demonstrates otherwise, as the unemployment rate for those disabled continues to increase, and they continue to be marginalized. With this ongoing disparity it may be necessary for businesses to develop new guidelines where applicants may voluntarily withhold their disability from the employer.

These findings also suggest employers need to be further educated regarding ASD in itself. Despite on the job training and workshops, many employers reported a greater need on how to effectively carry these strategies out to be effective long-term. Many employers also report that their current teaching material is outdated. Current training guides are a “one-guide fits all”, and not dynamic in nature or designed to one’s individual needs.

This is the first research study that incorporated the perspectives of vocational specialists and employers of ASD in the development of a future VET guide for employers. The research findings determined that vocational specialists who educated individuals with ASD primarily need modeling (*i.e.* hands on and video) incorporated into VET programs. The consensus was that vocational specialists believe that an individual with ASD social and behavioral skills inside and outside the workplace influences their ability to maintain employment. The lack of funding is the primary limitation in the development of successful VET programs. The majority of

vocational specialist reported having positive employment experiences with employers of grocery markets.

Vocational development and workplace policies must evolve to address employment disparities and inequality for those with ASD. These policies will identify ways vocational specialists and employers can fulfill the need for skilled workers by evoking the talents of job applicants with disabilities.<sup>11</sup> These results demonstrate that young adults with ASD need continuous support to close the employment gap, obtain sustainable wages, and career advancement opportunities.

One area of concern amongst vocational specialists and employers was the lack of funding to accommodate new educational strategies, hiring, training, and the incorporation of technologies. By obtaining government grants it would allow individuals with ASD to be trained and placed in well-paying jobs. Recipients would be allowed to expand and innovate the traditional hiring practice. Government grants will address the barriers of previously marginalized populations, the disabled, by facilitating job placement, training, and mentoring.<sup>11</sup> Government grants will ensure equal opportunity for young adults with disabilities. Additionally, the majority of employers reported a greater need for assistance in the hiring process for individuals with disabilities. With appropriate funding a new employment process could be implemented in establishments that enables its applicants during all stages of employment.

## **LIMITATIONS**

Several limitations exist in this current study. The most prominent limitation is the relatively small sample size. Due to the limited number of vocational specialist and establishments that hire adults with ASD in this geographic location, obtaining a larger sample

size was not possible. This study did not use a control group. This study only considered VET and employment. It did not consider non-vocational education and secondary education, which further limited the sample size. Moreover, this study was limited to only individuals with ASD ages 18 and older. Participation in this study required open-ended responses. The design of the study would have been more efficient and easier to measure using a multiple-choice survey.

## **CONCLUSION**

While vocational research in the context of ASD is limited, this study can be considered encouraging for the future area of vocational ability for adults with ASD. Future research should explore VET collected from a larger sample. These results provide preliminary support that VET needs improvement inside and outside of the workplace. These findings are particularly important, as there is currently limited information that is validated enhancing VET.

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**Supplemental Figures and Tables**

**Table 1 (Disability Status Report: Florida (Ages 21-64).** Data adapted from the 2015 Disability Status Report-Florida. Table includes total disabled, employed, annual earnings, and education amongst disabled workers in Florida 2015. Cognitively disabled percentages were manually calculated from total disabled from the Disability Status Report-Florida.<sup>5</sup>

Reported Disabled	<b>Disabled</b>	<b>Cognitively Disabled</b>		<b>Total Employed</b>
	1,145,900	52,200		11,284,100
Employed	<b>Disabled</b>	<b>Cognitively Disabled</b>		<b>Non-disabled</b>
	31.0%	11.0%		76.4%
Annual Earnings	<b>Disabled</b>	<b>Cognitively Disabled</b>		<b>Non-disabled</b>
	\$36,000	\$31,500		\$38,000
Education	<b>Education</b>	<b>Disabled</b>	<b>Cognitively Disabled</b>	<b>Non-disabled</b>
	High School	34.3%	36.9%	27.3%
	Some College	31.2%	27.4%	33.1%
	Bachelors	15.1%	11.7%	29.8%

**Table 2 (Vocational Specialist Semi-Structure Interview Questions for Individuals with ASD ages 18 and Older in South Florida).** Vocational specialists willing to participate in the study answered 7 semi-structured interview questions were coded. Codes were then generated into Reoccurring themes. The total number of respondents for each theme is tabulated.

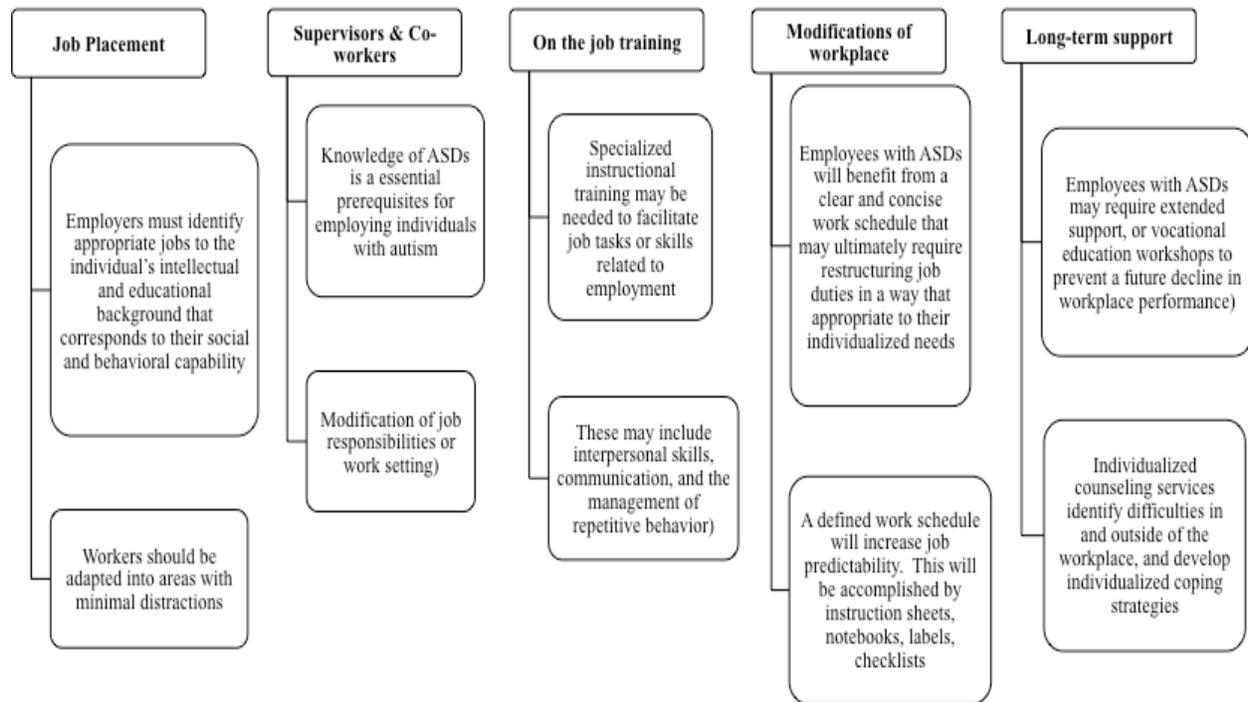
<b>Vocational Specialist Semi-Structured Interview Questions</b>	<b>Codes</b>	<b>Themes</b>	<b>Respondents</b>	
1) What makes vocational education training successful for individuals with autism to find employment?	Hands on experience	Modeling	12	
	Task analysis			
	Repetition			
2) Explain your experience with training students with ASD to be able to gain employment.	Teaching organizational skills		22	
	Teaching ADL's			
	Implementing video modeling			
	Teaching social skills			
3) What aspect convinces you that individuals with ASD are capable of fulfilling employment responsibilities successfully?	Independency	Autonomy	22	
	Able to be successful inside and outside the workforce			
	Not all are			
	Find the right career for each employee			
4) Prior to obtaining employment what effective vocational education strategies do you implement to facilitate employment?	Direct modeling	Modeling	13	
	Video-modeling			
	Preference assessment			
	Functional communication training			
5) Over the year what has been the greatest challenges with vocational education training?	Lack of funding	Funding	33	
	Time limitations			
	Difficult finding appropriate job sites			
	Lack of trained staff			
6) Which aspects need improvement and why?	Funding			15
	More training centers needed			
	Communication amongst staff			
7) Could you recommend an employer who you have had positive experiences with, in regards to hiring individuals with ASD?	Grocery Store	Grocery Store	15	
	Warehouse			
	Department Store			
	Restaurant			
	Hotels			
	Security			
Convenience Store				

<b>Total</b>	<b>29</b>	<b>4</b>	<b>117</b>
ADL's, activities of daily living, ASD, autism spectrum disorder			

**Table 3 (Employer Semi-Structured Interview Questions for Individuals with ASD ages 18 and Older in South Florida).** Employers of ASD willing to participate in the study answered 7 semi-structured interview questions were coded. Codes were then generated into reoccurring themes. The total number of respondents for each theme is tabulated.

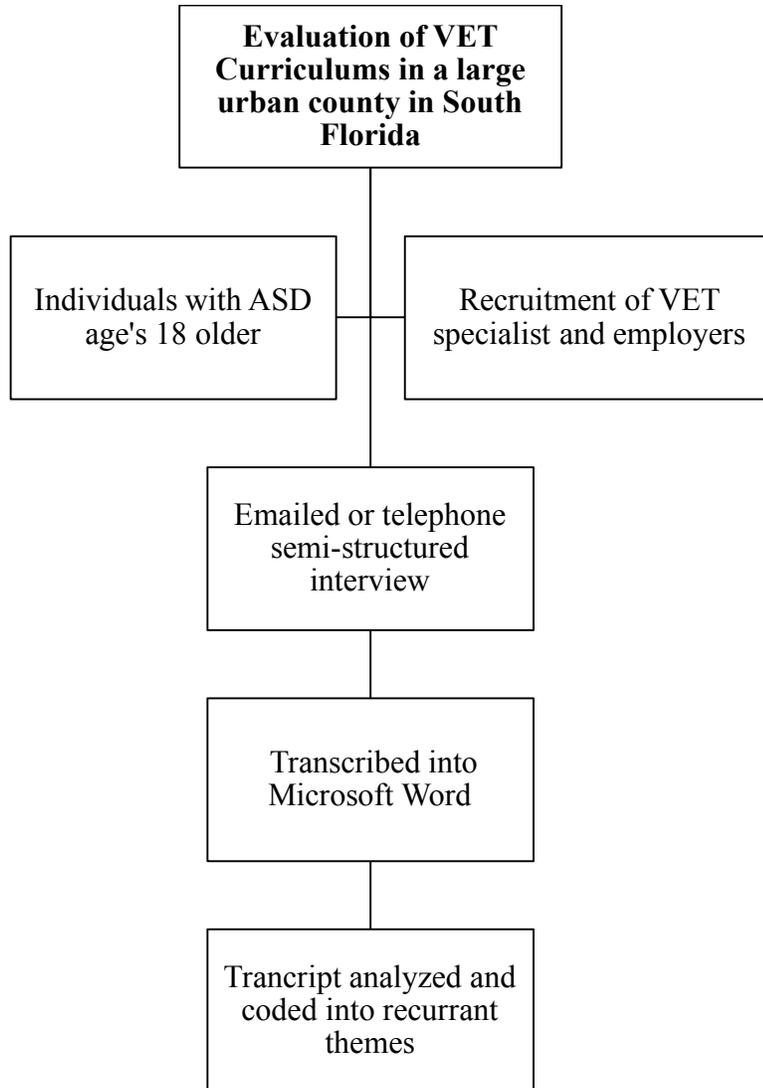
<b>Employer Semi-Structured Interview Questions</b>	<b>Codes</b>	<b>Themes</b>	<b>Respondents</b>
1) What makes you different to other companies, in regards to employing individuals with ASD?	Equal opportunity	Equality	20
	Pride in hiring those disabled		
	No discrimination		
2) Are there advantages to having employees with ASD? Why?	Detail-oriented	Consistency	14
	Observant		
	Repetitive task-oriented		
	Punctual		
3) How do you think the mindset could be changed of other companies who currently do not employ individuals with ASD?	Trustworthy	Equality	10
	Hiring system that does not reveal disability		
	Share experiences hiring those with ASD		
4) How do you support your employees with ASD?	Advertising when hiring those with ASD	Training	64
	Trainings		
5) Would you wish you would have or receive more support from community partners in regards to your employees with ASD if so, how?	Accommodations	Training	64
	Help with training for employees with ASD		
	ASD awareness		
6) How often do you provide training to enhance their skills?	Training employers in hiring those with ASD	Training	64
	On-going		
	Monthly		
7) Would you give your employees with ASD a higher position if they would demonstrate growth in the work field? Why or why not?	Training prior to starting job	Equality	10
	Yes		
	If able to fulfill job requirements		
<b>Total</b>	Equal opportunities		<b>118</b>
	<b>21</b>	<b>3</b>	

**Figure 1 (Vocational Education Training Components).** Current VET consists of job placement, supervision and co-workers, on the job training, modification of workplace, and long-term support.



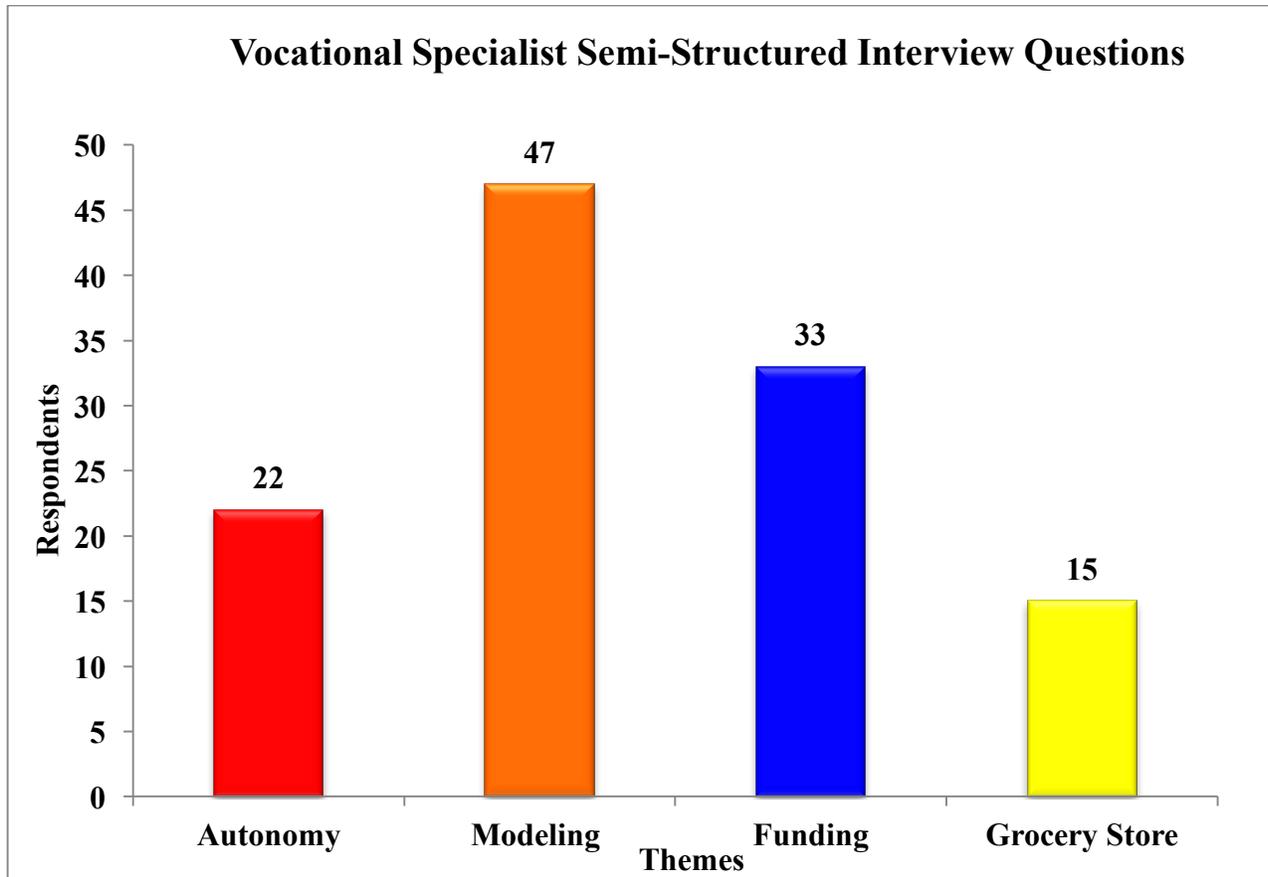
VET, Vocational education training

**Figure 2 (Methodological Framework).** Outline of research study of VET specialists and employers known to work with and employ individuals with ASD age's 18 and older in a large urban county South Florida.

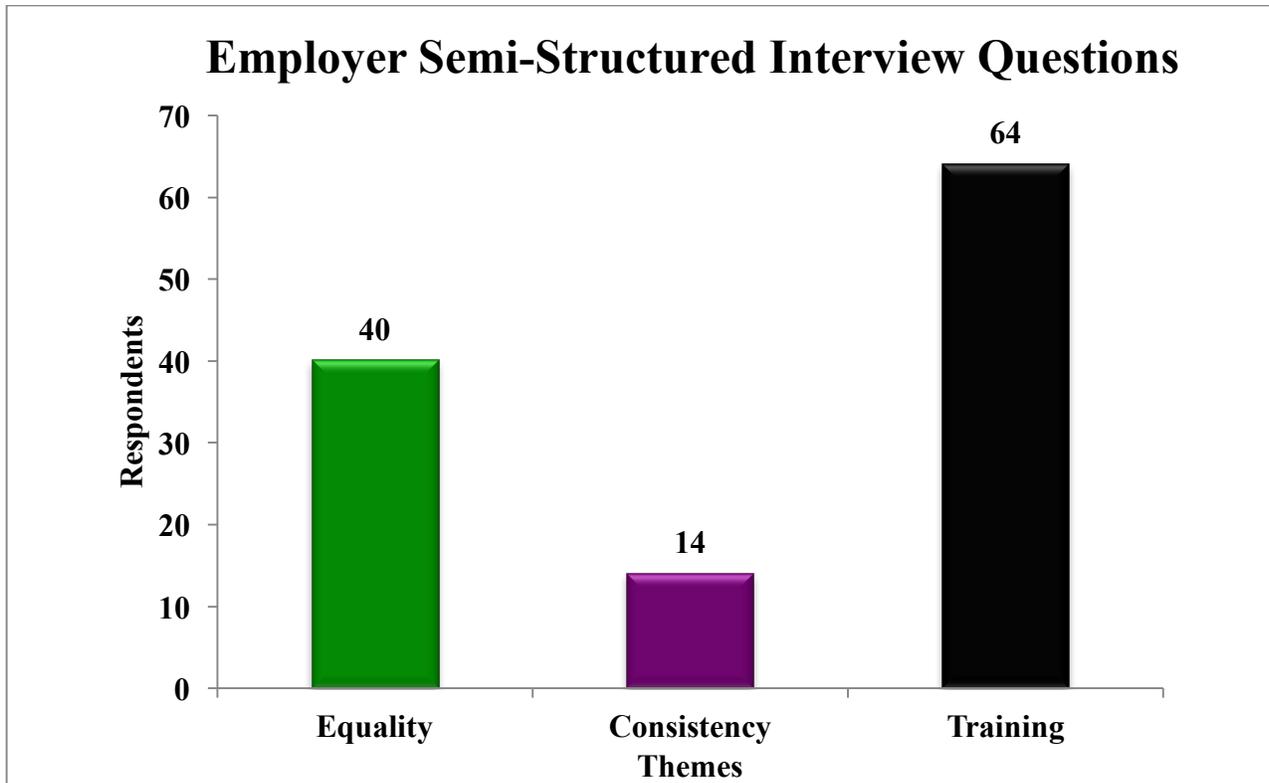


VET, Vocational education training

**Figure 3 (Vocational Specialist Semi-Structured Interview).** The most recurrent themes and corresponding number of respondents are graphically illustrated for each interview questions for vocational specialists.



**Figure 4 (Employer Semi-Structured Interview Questions).** The most recurrent themes and corresponding number of respondents are graphically illustrated for each interview questions for employers of individuals with ASD.



## CHAPTER V

### EXECUTIVE SUMMARY

#### **Subject Matter Introduction**

Autism spectrum disorder (ASD) is a neurodevelopmental disorders characterized by persistent deficits in social communication and social interaction and restricted, repetitive patterns of behavior, interests, and activities. The world prevalence of ASD was 1 in 132, and 1 in 59 in the United States, continuing to increase annually (CDC, 2018). The total cost for behavior interventions for a single individual with ASD costs \$40,000 to \$60,000 annually (CDC, 2018). The 2015 annual Disabilities Status Report determined that 35.2% of working age people (age 21-64) with disabilities in the United States were employed, while the U. S. Bureau of Labor Statistics reported 31.0% of working age people (age 21-64) with disabilities in the state of Florida were employed (Erickson et al. 2016). The increasing annual prevalence of ASD, high unemployment rate, and the inability of VET programs to address marginalization for the young adults with ASD creates an employment gap between the employed and unemployed. There are numerous benefits of employing young adults with ASD within the workplace (*i.e.* creativity) and personal development (*i.e.* autonomy, confidence).

The purpose of this study was two fold 1) investigate the development of a solution to reduce the unemployment rate currently facing in a large urban county in South Florida for adults with ASD ages 18 and over, and 2) use solutions to enhance the employment rate by developing a vocational training guide for employers. The guide will facilitate recruiting and the hiring process, along with the ability to maintain employment. This was accomplished by emphasizing communication and behavioral strategies, interpersonal skills, time management, and various work tasks among others.

A VET guide will accomplish two tasks; 1) increase the likelihood of obtaining and maintaining employment, and 2) the product created will be the foundation of measuring variables and empirical observation (*i.e.* self-regulation, social competence, empathy, responsibility, person's environment, and vocational skills). Individuals with ASD who are capable of integrating into a general education setting but lack social and behavioral skills should be entitled to the same educational and employment opportunities as the non-disabled.

This study addressed 3 research questions:

- 1) What additional training resources are needed to support employees with ASD?
- 2) What importance do social skills have in maintaining employment for individuals with ASD?
- 3) What would assist employers in hiring individuals with ASD?

Obtaining and maintaining employment is challenging for young adults with ASD due to impairments in social functioning, communication, and executive functioning (Taylor et al., 2013). Postsecondary employment opportunities have been restricted for those with ASD. The majority of individuals with ASD believe their employment difficulties are attributed to the social and behavioral demands within the work environment. Current vocational programs fail to incorporate social and behavioral strategies into their program, leading to impairments in the workplace.

The goal of VET is to provide support services to those with disabilities by allowing them to prepare for, accessing, obtaining, maintaining, and regaining employment, and will enable adults to become autonomous (Tomblin & Haring, 1999). Vocational education training can be broken down into 5 themes 1) job placement, 2) supervisors and co-workers, 3) on the job training, 4) modification of the workplace, and 5) long-term support. Current VET programs are limited by job placement skills, hiring, on the job training, and long-term support services. In the

state of Florida community VET programs are limited in availability and ongoing support services.

Despite the large unemployment rate for individuals with ASD, research has demonstrated they are capable in working in occupations with proper ongoing vocational support. To evaluate current VET programs a systematic literature review was performed to examine job placement, and starting wage for individuals with ASD. Additionally, a research study was conducted attempting to design a future VET program based upon the opinions of current vocational specialists and employers of ASD. Together these studies provide a solution of what is necessary to close the unemployment gap for young adults with ASD.

### **Method Analysis**

Articles were identified from 4 major databases from 1990 to August 2018 using key terms; *Vocational education training, autism training program, autism employment programs, autism employment, and autism unemployment*. Studies that were selected met the following inclusion criteria; VET usage for individuals to obtain employment. Excluded studies including other neurocognitive disorders, post-secondary education, and VET programs occurring in elementary schools. The efficacy of VET programs was evaluated using the employment rate after completion of the VET program, and average wage, employment rate, and annual budget.

Vocational specialists and employers of individuals with ASD ages  $\geq 18$  throughout a large urban county in South Florida were asked to participate in a semi-structured interview questionnaire via email or telephone. 85 emails were sent to 43 vocational specialists and 42 employers of ASD. Additionally, a circular was posted and distributed in local business to facilitate the recruitment process. Emailed and telephoned semi-structured interview questions consisted of the same 7 questions for each group. Telephone interviews were recorded and later

transcribed into word document. All recorded responses were then coded and grouped into recurrent themes.

## **Findings**

### *Review of Literature*

Twelve VET programs were identified that met the inclusion criteria. Of the 12 VET programs identified, 6 were further evaluated.

Project SEARCH received increases in hourly wage to \$9.53–\$10.66 per hour, while non-participants earned less than \$1.00 per hour. 87% of Project SEARCH participants maintained employment past 12 months of high school graduation (Wehman et al., 2013). In 2006, the first incoming class of Project SEARCH Bon Secours of St. Mary's Hospital had a 60% graduation rate. The graduation rate had increased in 2012 to 100% (Sedl, 2013).

PCDI of New Jersey employs 75% of its participants with 20 hours of work per week. The programs annual budget in 2017 was \$7,067,858 (PCDI, 2017). The Autism Center of Nebraska Connections teaches social skills and job-specific skills, vocational planning, career planning, ongoing instructions, as well as long-term support provided for the employer. In 2011 CAN's annual budget was estimated to be \$100,000 (Sedl, 2013). Of the 41 clients, 76% found competitive employment, receiving wages from \$7.25 - \$10.58 (Sedl, 2013).

The Autism Society of North Carolina annual budget was \$700,335 in 2010. Of the 74 individuals with ASD receiving services, 87% found competitive employment, and obtained wages ranging from \$7.25-\$10.00 per hour (Sedl, 2013). The TEACCH Supported Employment Program assisted individuals with ASD in job search skills, practicing interview, and find employment opportunities. The programs annual budget was \$800,000 (Sedl, 2013). In 2009,

100% of the 31 participants obtained employment after completing the program, earning competitive wages from \$7.15-\$18.00 an hour (Sedl, 2013).

### *Research Study*

Of the 85 participants surveyed via email, 61 responded ( $n = 31$  VET specialists;  $n = 30$  employers). Amongst the 61 participants, 1 participated via telephone.

A total of seven semi-structured interview questions were asked to vocational specialists ( $n = 31$ ) who work directly with young adults with ASD ages 18 and older in a large urban county in South Florida. Across the 7 open-ended questions amongst vocational specialists ( $n = 31$ ), a total of 117 responses were recorded, and 29 codes were recorded, and 4 recurring themes were developed. Amongst employers ( $n = 30$ ), a total of 118 responses were recorded across 7 semi-structured interview questions. From the 118 responses, 21 codes were created, and 3 recurring themes were developed.

The most common recurrent themes from the 7 semi-structured interview questions amongst vocational specialists ( $n = 31$ ) were autonomy (22), modeling (47), funding (33), and grocery store (15). The most common recurrent themes from the 7 semi-structured interview questions amongst employers ( $n = 30$ ) were equality (40), consistency (14), and training (64).

### **Conclusion**

The review of literature demonstrated that employment allows those with ASD to develop interpersonal, social, and communication skills. Employment directly fulfills one's autonomy, self-confidence, and independence. The majority of current VET programs focus on developing employability skill sets when transitioning into the workplace. Increased annual budget lead improved employment rates, and increased wages of all evaluated VET programs.

The research findings revealed employees with ASD need additional hands on training,

and external support services necessary for their individual needs. The majority of employers reported a greater need in guidance in regards to the hiring process for individuals with disabilities, which can be facilitated through additional funding. Additional funding may lead to a non-discriminatory employment process that prevents marginalization for the disabled.

From the responses of vocational specialists and employers new program development should address employment disparities for those ASD in the workplace. These results determined from this study indicated young adults with ASD need individualized ongoing support to close the employment gap. In order to address the employment gap between individuals with ASD and VET the following research questioners were asked:

- 1) What additional training resources are needed to support employees with ASD? The results indicated that assistance was needed in ongoing and continuing education. Vocational education specialists believed that that hands on experience and repetition was the most valuable resource.
- 2) What importance do social skills have in maintaining employment for individuals with ASD? Vocational specialists believed that social and behavioral skills should be ongoing and individualized that are suitable for ones particular job description.
- 3) What would assist employers in hiring individuals with ASD? Additional funding, and educating employers regarding their capabilities and ongoing requirements would assist in hiring individuals with ASD.

An employer VET guide was created to assist employers in hiring individuals with ASD, and help adults with ASD obtain and maintain employment. The employer VET guide provides descriptions and explanations about ASD, the advantages of hiring individuals with ASD and potential work challenges. The employer VET guide provides numerous suggestions that may fit to the employer's resources as to what strategies and methods employers can implement within

their business to help individuals with ASD obtain, maintain and be successful within their employment.

### **Limitations**

The review of literature was limited to articles only related to ASD. There was no limit to age. VET programs were private or public, and were implemented during high school only. Programs were evaluated on the basis of job placement and entry-level wage. Post-secondary education was not evaluated.

The study conducted was limited to the small sample size ( $n = 31$  VET;  $n = 30$  employers). No control group was used. This study considered vocational specialists and employers of ASD only. This study was limited to only individuals ages  $\geq 18$  with ASD and excluded other neurodevelopmental disabilities. The design of the study would have been more efficient for data analysis using a multiple-choice questionnaire.

### **Recommendations**

Programs should include all grades K-12. In addition to job placement and wage, programs can further be evaluated on the ability to maintain long-term employment, and on basis of post-secondary education matriculation (*i.e.* college). VET programs should also be evaluated on individualized and ongoing support services.

Future research should explore a larger sample and not be limited to a large urban county in South Florida. It should also consider other neurodevelopmental disabilities. Further studies should use a control in its design, and be random, controlled, and double blinded. This would be accomplished by comparing current VET programs to a new intervention used amongst vocational specialists or employers. Additionally, the study should not be limited to employers of ASD; rather it should be expanded to the educational setting and college professors.

Additionally, by eliciting the perspectives of VET specialists and employers of ASD an employer based vocational guide could be implemented within the workplace to address the poor employment outcomes. The guide would not only further educate employers about ASD but also teach employers how to effectively carry out particular strategies to their employees within the workplace in hopes to overcome social and behavioral impairments.

## CHAPTER VI

### PRODUCT

#### **An Employer's Guide for Integrating Employees with Autism Spectrum Disorder**

The guide “An Employer’s Guide for Integrating Employees with Autism Spectrum Disorder” was created by the researcher based on the literature review and a study conducted for employers of small and large business, hiring individuals with ASS. The VET guide is intended to support employers with the process of hiring people with ASD, and helping individuals with ASD obtain and maintain employment long-term. It thoroughly explains various strategies and interventions that can be implemented into the workplace. The guide defines what the strategies are, their importance, and how to implement them effectively. In addition, various examples and visuals are provided within the guide to provide the employers with a better understanding.

The recommendations were derived from the results of the dissertation entitled Perceptions of Vocational Education Specialists and Employers of Adults with Autism Spectrum Disorder, which aimed to improve the employment possibilities for adults with ASD.

The open-ended responses to the semi-structured interview questions from the vocational education specialists supported the literature in regards to the importance of training, on going support and the education of vocational skills to be successful in executing job responsibilities. In addition, the problems lay not only getting hired for a job but maintaining the position long-term. Therefore, it is vital for employers to understand the disability and understand strategies to use with individuals with ASD that can alleviate stress for the employee as well as for the employer.

Several of the VET specialists open-ended answers revealed that not every person with ASD is the same, you can only help one by one by understanding their strengths and what motivates them. The answers to the semi-structured interview questions of the VET specialists

reflected many literature findings. The product was derived based on the literature findings, responses of the VET specialists and the responses of the employers. Based on the employer responses it was derived that they are seeking for guidance and training in relation to hiring individuals with ASD. The employer VET guide is meant to teach employers how to best support adults with ASD in the workplace. The strategies in the employer's VET guide are presented to help individuals with ASD obtain and maintain employment.

Employer support is in great need, and therefore, the hopes are to better the economic situation with the employer's VET guide. The aim is to create more job opportunities by helping employers understand ASD better, and convey that implementing appropriate interventions and strategies will significantly diminish any challenges adults with ASD may have in the workplace. Additionally, the guide attempts to clear up any unfortunate misconceptions when employing anyone with ASD. Collaborating with individuals with ASD can be of great benefit to businesses due to their unique talents. However, the only thing required is for employers to recognize them and be proactive in guiding their employees to success.

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**LIST OF TABLES**

**Table 1***Identified Prevalence of Autism Spectrum Disorder*

<b>Surveillance Year</b>	<b>Birth Year</b>	<b>Number of ADDM Sites Reporting</b>	<b>Prevalence per 1000 Children</b>	<b>This is about 1 in X children</b>
2000	1992	6	6.7	1 in 150
2002	1994	14	6.6	1 in 150
2004	1996	8	8.0	1 in 125
2006	1998	11	9.0	1 in 110
2008	2000	14	11.3	1 in 88
2010	2002	11	14.7	1 in 68
2012	2004	11	14.6	1 in 68

NOTE: All data adapted from the Centers for Disease Control and Prevention (CDC, 2017).

**Table 2***2015 Disability Status Report: Florida (Ages 21-64)*

Reported Disabled	<b>Disabled</b>	<b>Cognitively Disabled</b>		<b>Total Employed</b>
	1,145,900	52,200		11,284,100
Employment	<b>Disabled</b>	<b>Cognitively Disabled</b>		<b>Non-disabled</b>
	31.0%	11.0%		76.4%
Annual Earnings	<b>Disabled</b>	<b>Cognitively Disabled</b>		<b>Non-disabled</b>
	\$36,000	\$31,500		\$38,000
Education	<b>Education</b>	<b>Disabled</b>	<b>Cognitively Disabled</b>	<b>Non-disabled</b>
	High School	34.3%	36.9%	27.3%
	Some College	31.2%	27.4%	33.1%
	Bachelors	15.1%	11.7%	29.8%

NOTE: All data adapted from the 2015 Disability Status Report, and Quantifying the Unemployment Rate for Workers with Disabilities in Florida.

**Table 3***2015 Disability Status Report: A Large Urban County in South Florida (Ages 21-64)*

Reported Disabled	<b>Employed</b>		<b>Unemployed</b>		<b>Total</b>
	Individuals	Rate	Individuals	Rate	
	23,074	34.9%	4,989	7.6%	
Prevalence	<b>Disabled</b>		<b>Cognitively Disabled</b>		
	34.9%		11.0%		
Unemployment Rate	<b>Disabled</b>		<b>Cognitively Disabled</b>		
	7.6%		2.8%		

NOTE: All data adapted from the 2015 Disability Status Report, and Quantifying The Unemployment Rate for Workers with Disabilities in Florida.

**Table 4***Theories of Cognition in Autism*

<b>Theory</b>	<b>Rational</b>	<b>Literature</b>
Theory of Mind (ToM)	ToM is the ability to attribute various mental states ( <i>i.e.</i> beliefs, desires, intents) to oneself, and the understanding that individuals have different mental states from their own. They become “blind” to other’s mental states.	Povinelli, 1996
Weak Central Cohesion (WCC)	Individuals with ASD are said to have difficulty with integrating information at different levels. In addition, they are more detail oriented and therefore might have difficulty understanding context or understand the meaning of stories.	Merrill, 2015
Executive Functioning Disorder	Individuals with ASD demonstrated deficits when it came to complex tasks and abstract concepts such as planning, problem solving and verbal reasoning.	Merrill, 2015

**Table 5***2015 Percent of State Children with Disabilities by Race/Ethnicity, Ages 6-21*

<b>Disability Category</b>	<b>Hispanic (%)</b>	<b>Black (%)</b>	<b>White (%)</b>	<b>Asian (%)</b>	<b>American Indian or Alaska Native (%)</b>	<b>Native Hawaiian or Other Pacific Islander (%)</b>	<b>Two or more races (%)</b>	<b>All Race/Ethnicities (%)</b>
All Students	27.8	22.8	43.4	2.5	0.4	0.1	3.0	100
Autism	26.3	16.4	43.2	1.2	0.4	0.1	2.7	100
Def-blindness	28.0	20.4	49.3	2.7	0.3	0.1	3.1	100
Emotional Disturbance	25.9	40.8	44.4	X	0.0	0.0	X	100
Hearing Impairment	16.6	22.5	39.0	0.2	0.3	0.0	3.0	100
Intellectual Disability	28.1	39.8	43.7	3.0	0.1	X	2.3	100
Orthopedic Impairment	26.4	20.0	48.5	1.4	X	0.1	2.1	100
Other	24.5	20.6	50.9	2.0	0.4	X	2.5	100
Specific Learning Disability	30.5	25.0	40.7	0.8	0.4	0.1	2.7	100
Speech or Language Impairment	23.5	23.5	47.5	0.7	0.4	0.1	2.5	100
Traumatic Brain Injury	20.2	27.1	47.9	1.9	X	0.0	3.2	100
Visual Impairment	25.2	22.0	47.7	X	X	X	2.1	100

NOTE: The percentage of children with disabilities (IDEA), ages 6 through 21, in a particular disability category and particular race/ethnicity category in the state. Data reported for IDEA 2011 Child Count and 2010-11 CCD. Adapted from <http://www.ideadata.org>.

**Table 6***Current Vocational Education Programs for Adults with ASD*

<b>VET Programs for Adults with ASD in USA</b>	<b>Background</b>	<b>The programs aim</b>	<b>Methods of introducing program</b>	<b>Author</b>
Treatment and Education of Autistic Related Communication Handicapped Children (TEACCH)	Founded in 1989. Provides vocational training in centers for individuals with ASD in which the individuals receive long-term supported employment. 5-day workshop for anyone who is involved in the transition of individuals with ASD ( <i>i.e.</i> trainers, psychologists, professionals) to provide high-quality and intensive education on how to teach vocational, independent living and social skills.	Vocational skills Social skills Independent living skills	Training professionals on how to teach individuals with ASD vocational skills	Shea, 2013
Adult Life-Skills Program at Princeton Child Development Institute (PCDI)	Program has been implemented since 1987. Participants with ASD attend a Vocational training workshop. PCDI focuses on individual needs and assessments. Individual intervention planning takes place for each participant. The type of program that will be determined for the participant to follow will be based on the individuals daily routine, assessment of future work options, his/her interests and social partaking. PCDI	Vocational skills Communication Independent living skills	Working directly with individual adults with ASD	McClannahan et al. 2002

	arranges employment possibilities within the institute in case of behavioral or health concerns of a participant. PCDI provides life-skill coaches that incorporate life-long supportive counselors who accompany the participants to their employment.			
Pacific Autism Center for Education (PACE)	PACE implements a program, which provides vocational education training to adults with ASD. The training teaches vocational skills, independent living skills as well as skills that obtain inclusion in society. PACE provides individuals with ASD the opportunity to gain working experience through their practical experience in a working environment.	Independent living skills Vocational Skills	Work directly with adults with ASD	Syriopoulou-Delli, 2011
Life skills education for students with autism and other pervasive behavioral challenges (LEAP)	A 12-month program that's aim is to teach functional skills to participants with ASD. The program teaches participants <i>inter-alia</i> in vocational skills. LEAP offers services, which incorporate receiving services from speech language therapists, occupational therapist, counselors etc. Extramural programs are offered to participants with ASD once they turn sixteen years old.	Functional skills Vocational skills	Lessons are provided individually or in groups for participants with ASD	Strain & Hoyson, 2000
Autism Society	Every summer training	Vocational	Work directly	Syriopoulou-

of Oregon (ASO)	for occupation is provided for children and adults. Regular workshops and seminars are provided for parents. ASO is in collaboration with organizations, enterprises, community services and agencies in order for the participants with ASD to find employment and be integrated into the community.	skills	with young adults and adults with ASD and their families.	Delli, 2011
Grodan Network Vocational and Employment (GNVAE)	GNVAE is a vocational and employment program. The program is constructed to aid individuals with ASD from the age of fourteen and upwards. The program helps the participants to find their interests and teach working skills in combination to their interests. Working skills can be practiced in the community as well as the laboratory. One the participant with ASD demonstrated genuine interest in a particular work of field, intensive vocational practical training will be provided as well as social skills training to provide the best opportunities for vocational inclusion.	Working Skills Social Skills	Work directly with individuals (as young as 14) with ASD and upwards.	Syriopoulou-Delli, 2011
Cove Center Program (CCP)	CCP aims social inclusion in adults with ASD. The participants all have to be employed (full time or part-time) in order to take part in the	Social skills Behavior skills	Work directly with adults with ASD who are already employed.	Syriopoulou-Delli, 2011

	program. CCP evaluates and focuses on teaching appropriate behavior within the participant's workplace.			
Autism Center for Excellence at Virginia Commonwealth	Supported employment model is there to help individuals with disabilities through the employment process. Accommodations such as a job coach will be provided in order to help find work, the participant being trained for the position, and to maintain employment. The goal is to find employment with competitive wages. The program emphasizes on the participants self-determination, focusing on personal growth and development.	Vocational skills	Work directly with individuals with ASD who portray intrinsic motivation.	Wehman et al., 2003
Project Search	Cincinnati Children's Hospital Medical Center, Children's emergency department created Project SEARCH for the purpose to train people with developmental disabilities for entry-level positions within the department. Training for vocational skills provided for individuals with developmental disability throughout 300 sites across USA, Canada, England, Scotland, Ireland, and Australia.	Vocational on-site training	Work directly with individuals with developmental disability.	Wehman et al., 2013

NOTE: Adapted from Review on Vocational Training and Employment for Individuals with Autism Spectrum Disorder; Systematic review of current vocational programs offered to individuals with ASD (Delli, Alexiou, & Karampilia, 2016).

**Table 7***Community Programs in Florida for Adults with Autism*

<b>Community Organization</b>	<b>Location</b>	<b>Description</b>	<b>Reference</b>
Goodwill Industries International	Global Including central, Florida	-Nonprofit. Local Goodwill's across country provide training and employment tools for individuals with disability -Preparing for positions in industries ( <i>i.e.</i> retail, banking, hospitality, food service) with trainings such as occupational skills training -Career centers helping with job searches, writing resumes and interview skills, on-the-job training, soft skills, supported employment amongst various others	<a href="http://www.goodwill.org/training-and-work-opportunities-for-goodwill-programs/">http://www.goodwill.org/training-and-work-opportunities-for-goodwill-programs/</a>
		-Nonprofit public/private partnership -Programs and grants -Providing individuals with disabilities	<a href="http://www.abletrust.org/about-us">http://www.abletrust.org/about-us</a>

The Able Trust	Tallahassee, Florida	<p>opportunities for successful employment.</p> <p>-Job-coaching, supported employment, job-skills training, job development, employer outreach, ADA facility compliance, and skills evaluation.</p> <p>-For every dollar invested in vocational rehabilitation, thirteen to twenty-six dollars are circulated back into the economy, making funds available to individuals with disabilities</p> <p>-The Able Trust grant awards</p>	
The ARC of Florida	Twenty eight ARC sites within Florida	<p>-Nonprofit</p> <p>-Believes in improving the quality of life for individuals with intellectual and developmental disabilities</p> <p>-Work with local state, and national partners</p> <p>-Advocates for local chapters, public policies to ensure individuals with intellectual and developmental disabilities are included to the maximum in their community</p>	<a href="http://www.arcflorida.org/who-we-are/">http://www.arcflorida.org/who-we-are/</a>
CARD	University of South Florida	<p>-Providing communities, organizations, agencies, service providers, and families with the knowledge and skills to support children, and adults in early intervention, school, community, work, and home</p> <p>-Organizing and conducting local, regional, and statewide training events</p> <p>-Engage in individual consultation</p>	<a href="http://card-usf.fmhi.usf.edu/about/card.html">http://card-usf.fmhi.usf.edu/about/card.html</a>
JARC	Boca Raton, Florida. Offered nationwide.	<p>-Nonprofit</p> <p>-Supports residential, vocational and recreational opportunities for individuals with disabilities</p> <p>-Main purpose is to teach independent living skills</p>	<a href="http://www.jarc.org">http://www.jarc.org</a>
The Transportation Disadvantaged Program	Offered in all 67 counties in Florida	<p>-State funded program</p> <p>-Provides vital transportation to education, employment, and medical appointments.</p>	<a href="https://www.psta.net/programs/td-transportation-disadvantage/">https://www.psta.net/programs/td-transportation-disadvantage/</a>
		<p>-Nonprofit</p> <p>-Programs and services for individuals with ASD and related disabilities offer a ten month training (educational model) to prepare young adults with ASD for</p>	<a href="https://danmarinofoundation.org/programs/">https://danmarinofoundation.org/programs/</a>

Dan Marino Foundation	Fort Lauderdale, FL	<p>employment and independence named Marino Campus</p> <ul style="list-style-type: none"> <li>-Another program is 'ViTA DMF' which is a software (virtual reality technology) which simulates job interviews</li> <li>-2016 it won google impact challenge grant award in the area of disabilities</li> <li>-Amongst many more services and programs</li> </ul>	
Division of Vocational Rehabilitation Florida Department of Education	Twenty-one office location in Florida	<ul style="list-style-type: none"> <li>-Federal State program</li> <li>-Providing programs and services such as "Transition Youth" to help young adults with disabilities prepare and plan for employment success after high school</li> </ul>	<a href="http://www.rehabworks.org/programs.shtml">http://www.rehabworks.org/programs.shtml</a>
Florida HATS- Health and transition services	University of South, Florida	<ul style="list-style-type: none"> <li>-Services and support offered for young adults with disabilities to transition to aspects of adult life (health care, work, and independence)</li> <li>-Support and referrals to necessary services are provided in regards to the rights of public independent living, secondary and post-secondary education, advocacy, health insurance and financial amongst many more</li> </ul>	<a href="http://www.floridahats.org/about-us/">http://www.floridahats.org/about-us/</a>
Easter Seals	<p>West Palm Beach, Florida</p> <p>75 local Easter Seals in communities nationwide + four international partners in Australia, Mexico, Puerto Rico and Canada.</p>	<ul style="list-style-type: none"> <li>-Nonprofit</li> <li>-Offering high amounts of resources to more than one million people living with a disability annually</li> <li>- Services such as Adult and Senior services, autism services, medical rehabilitation and health services, mental health services, residential and housing services</li> <li>-Inclusive services such as offering homes and community based series and supports. Their philosophy is "Live, Learn, Work, Play and act".</li> <li>-Vocational services offered include: employment planning services, job placement competitive employment services, school-to-work transition services, senior community service employment program (Job training), and supported employment services.</li> </ul>	<a href="http://www.easterseals.com/our-programs/employment-training/wfd-services.html">http://www.easterseals.com/our-programs/employment-training/wfd-services.html</a>
		-Non for profit	<a href="http://www.s">http://www.s</a>

Special needs alliance	Nationwide including Florida	<ul style="list-style-type: none"> <li>-Involving attorneys who are committed to helping individuals with disabilities, their families and professionals who serve them</li> <li>-Focusing on public benefits, planning for disabilities, or special education issues</li> <li>- Collaborating with supporters throughout special needs community to improve quality of life for individuals with disabilities</li> </ul>	<a href="http://specialneedsalliance.org/about-special-needs-alliance/">pecialneedsalliance.org/about-special-needs-alliance/</a>
Palm Beach School for Autism	Lake worth, Florida	<ul style="list-style-type: none"> <li>-Nonprofit</li> <li>-“Life Learning Program” emphasizes on teaching independence individualized for each student (Grade level 9-12)</li> <li>- Teaching Job skills training (on site and off site), “soft skills”, self-confidence, interpersonal communication, goal setting, self advocacy, independent living skills, food/meal prep, scheduling and time management, social relationships</li> </ul>	<a href="http://pbsfa.org/high-school/">http://pbsfa.org/high-school/</a>
The Victory Center for Autism and Related Disabilities	North Miami Beach, Florida	<ul style="list-style-type: none"> <li>-Non for profit</li> <li>-Provides children with ASD and similar disorders all-inclusive individualized treatment (1:1,2:1 and 3:1 student/teacher ratio)</li> <li>-The Victory Vocational Program for ages 14-22 by using Applied Behavior Analysis (ABA) in classroom, living skills lab and community settings functional skills, functional communication, social skills, functional academics, vocational and daily living skills are being taught</li> </ul>	<a href="https://www.thevictoryschool.org/programs-services/">https://www.thevictoryschool.org/programs-services/</a>
Disability Independence Group	Miami, FL	<ul style="list-style-type: none"> <li>-Non-for profit</li> <li>-Strives to encourage more persons with disabilities to have equal opportunities in the workforce</li> <li>-Disability Independence Group conducted the first focus group of lawyers with disabilities to identify barriers throughout the legal profession in Florida</li> <li>-Represent and work with several local and national fair housing organizations and disability organizations</li> </ul>	<a href="http://disabilityrights-law.org/user/62">http://disabilityrights-law.org/user/62</a>

**Table 8***Community Programs in Florida for Young Adults with Autism Ages 18 and over*

<b>Organization</b>	<b>Location</b>	<b>Programs offered</b>	<b>Website</b>
Ann Storck Center- discovering abilities- building independence	Fort Lauderdale , FL	Adult day training (ADT), sensory programming vocational training music & art therapy recreation	<a href="http://www.annstorckcenter.org/adult-day-training">http://www.annstorckcenter.org/ adult-day-training</a>
The Arc	Vero Beach, FL	Behavior services, residential services, supported employment Adult training (ADT): OYSTER MAT project Transportation	<a href="http://www.arcir.org/adult-day-training-adt.html">http://www.arcir.org/adult-day- training-adt.html</a>
CARD Adult services	Boca Raton, FL	Ages 18 and over applied behavior analysis therapy, vocational skills, social skills	<a href="http://www.centerforautism.com/programs.aspx">http://www.centerforautism.com/ programs.aspx</a>
The WOW Center	Miami, FL	Teaching communications, self-care, home living, social skills, health and safety, self-direction, functional academics, employment, leisure	<a href="http://wowcentermiami.org/programs">http://wowcentermiami.org/progr ams</a>
ZENITH- psychological Services	West Palm Beach, FL	Applied behavior analysis, speech therapy, occupational therapy, individual therapy, group therapy, physiotherapy	<a href="http://www.zenithpsych.com/services/">http://www.zenithpsych.com/ser vices/</a>

**Table 9***Independent and Dependent Variables*

<b>Independent Variables</b>	<b>Dependent Variables</b>
Individuals with ASD ages 18 and over	Semi-structured interview by email or audio-taped when conducting interview by phone, virtual or face-to-face of vocational education specialists in a large urban county in South Florida
Neurodevelopmental disorder: ASD	Semi-structured interview by email or audio-taped when conducting interview by phone, virtual or face-to-face of store managers of grocery stores, retail, and department stores in a large urban county in South Florida
Location: Schools, grocery stores, department, and retail stores in a large urban county in South Florida	

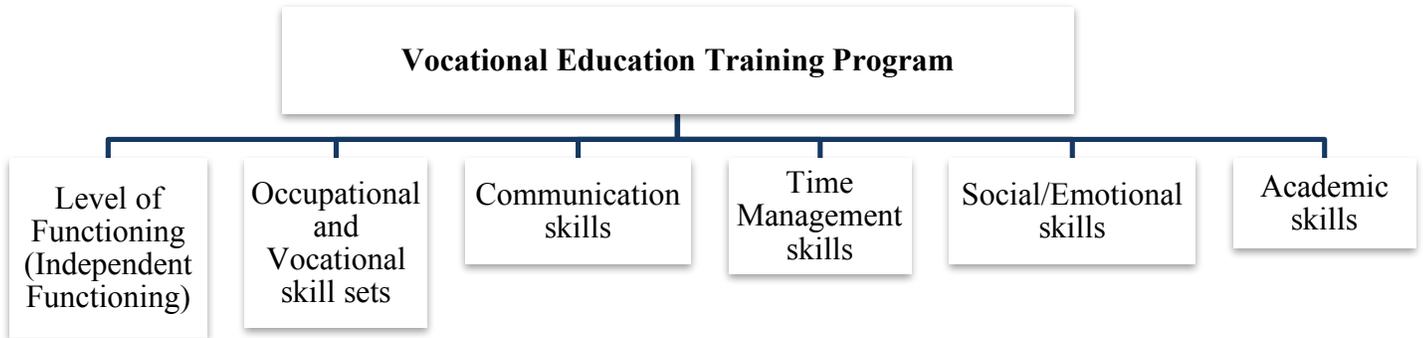
**Table 10***Qualitative Instruments for Data Analysis*

<b>Qualitative Instruments</b>
Semi-structured open-ended questions: Audio recorder ( <i>i.e.</i> iPhone and iPad)
Microsoft Word
Microsoft Excel

**SUPPLEMENTAL FIGURES**

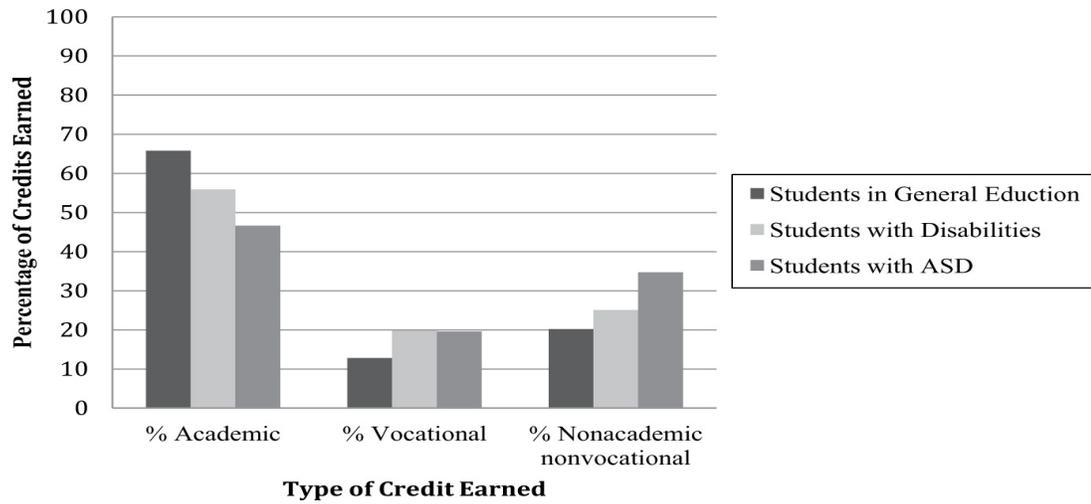
**Figure 1**

*Vocational Education Training Program Components*



**Figure 2**

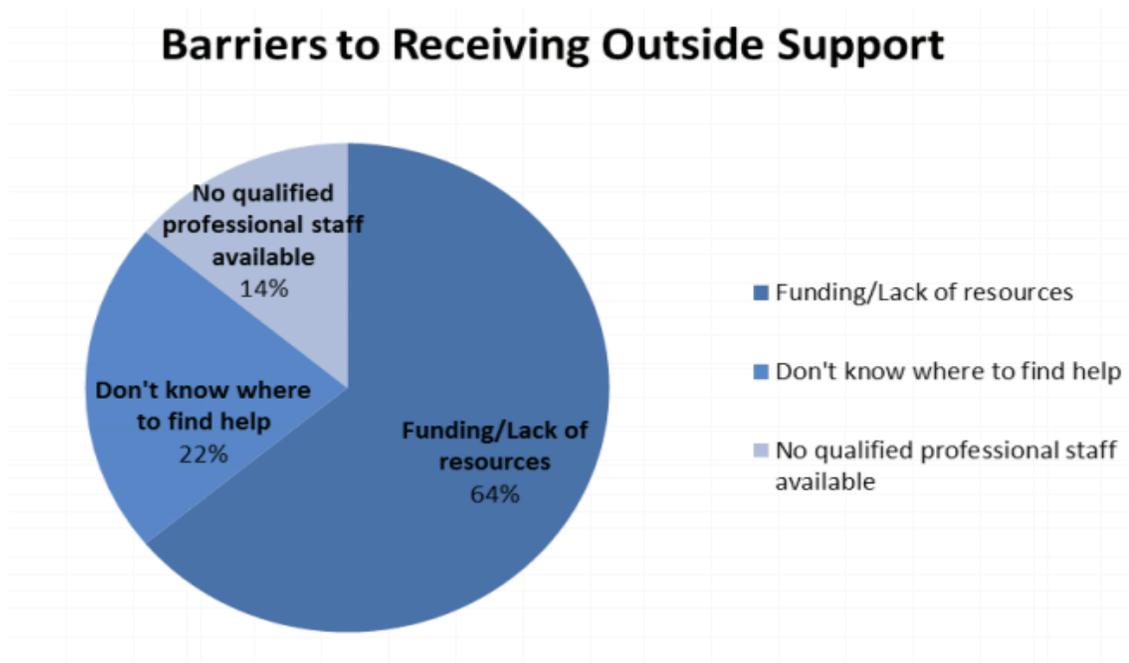
*Percentage of Credits Earned*



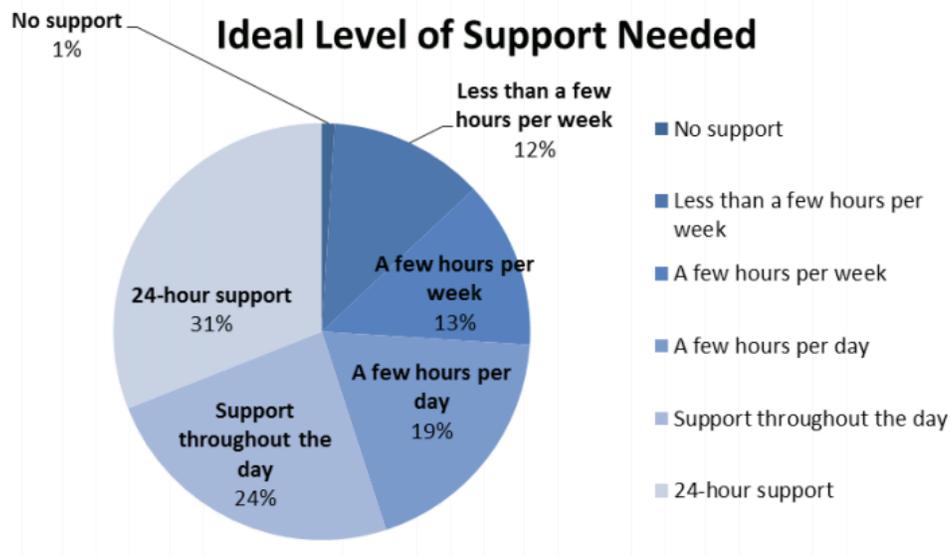
High School Credits Among General Education, Students with Intellectual Disabilities, and ASD. Percentage of high school credits earned for students without disabilities in general education, students disabled, and students with ASD, as determined by the NLTS-2 (Wehman et al., 2014).

**Figure 3**

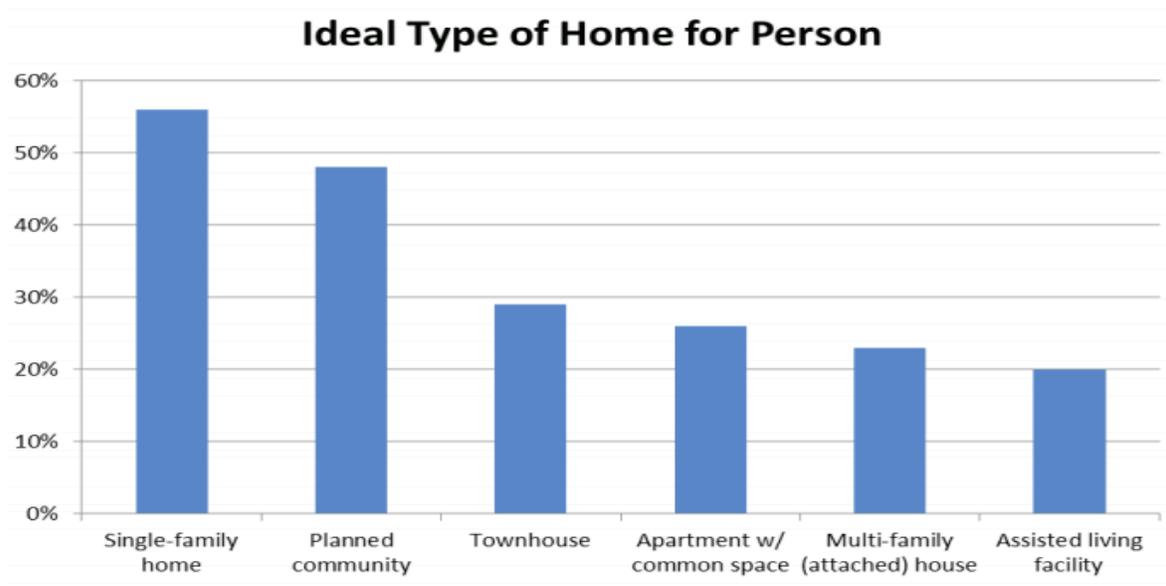
*Barriers to Receiving Outside Support*



Agencies refer to those receive funding from a 3rd party source (*i.e.* state, federal, insurance, etc.). 34% of all respondents reported that they do not have outside help but they are in need of assistance. About two-thirds of this group cited a lack of financial resources as the main reason for this (Autism Speaks, 2014).

**Figure 4***Ideal Level of Support Needed*

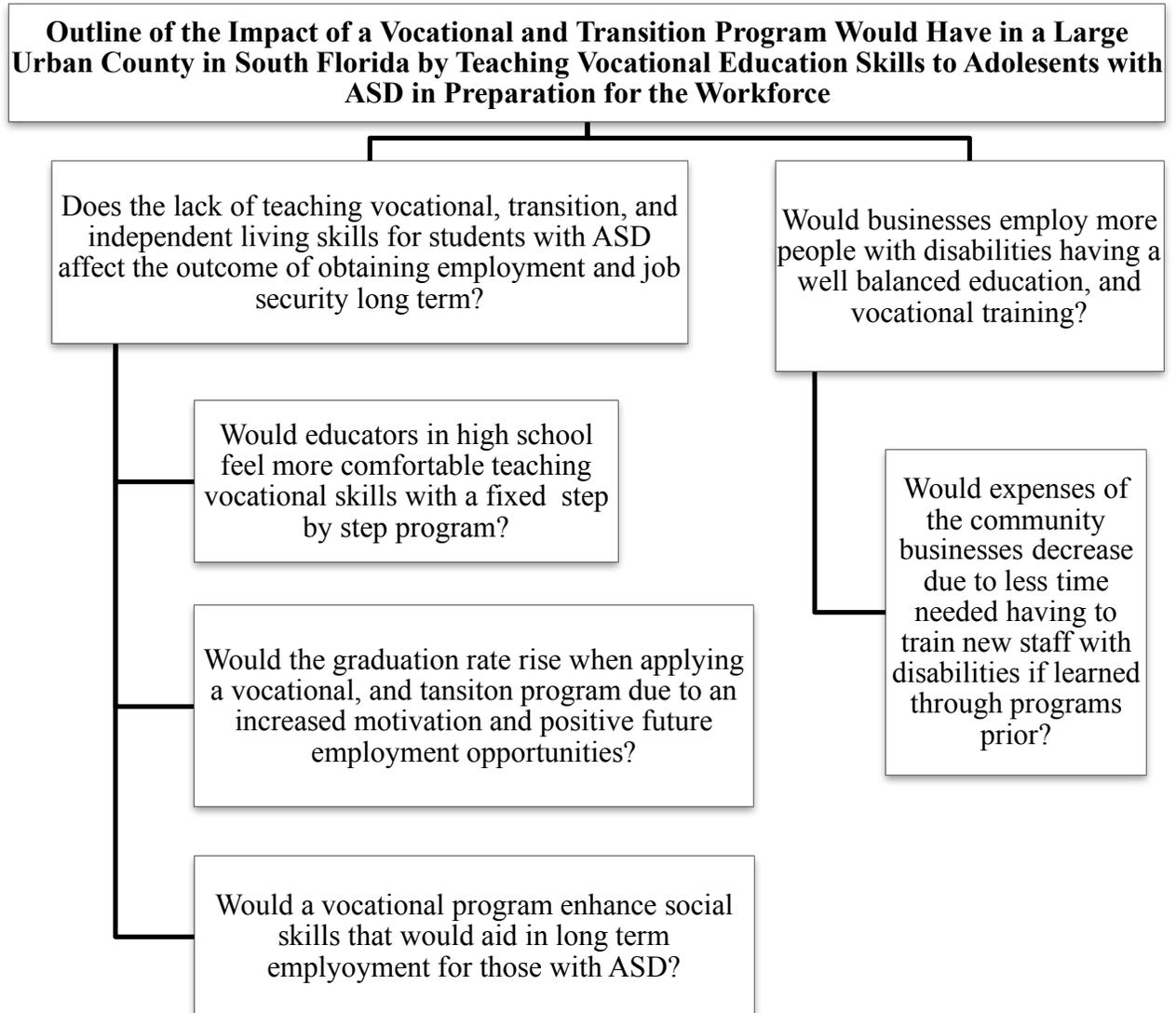
Three in 10 caregivers said that 24/7 support would be needed. The results were drastically different from the level of supports currently received by the individual, indicating a great need for additional residential support services for the autism community. Nearly three quarters of respondents said in an ideal situation, the individual would have a few hours per day or more of support in his or her living environment (Autism Speaks, 2014).

**Figure 5***Ideal Type of Home for a Person*

When asked to rank the style of housing in an ideal situation, six in ten caregivers preferred single-family homes. Planned/intentional communities were a close second choice (Autism Speaks, 2014).

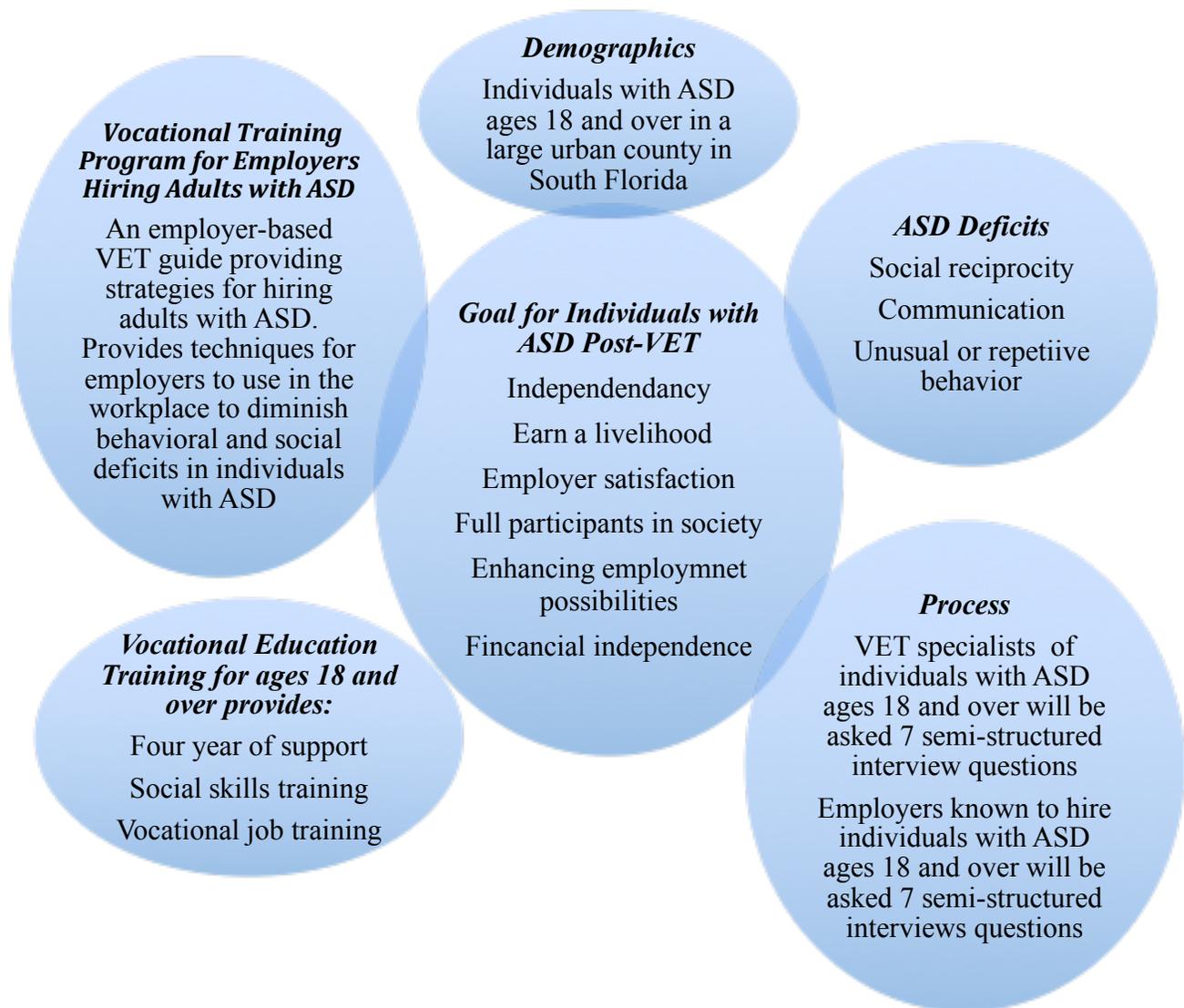
**Figure 6**

*Outline of the Potential Impact of Vocational and Transition Programs in a Large Urban County in South Florida*



**Figure 7**

*Framework (Goals for Individuals with ASD Post-VET)*



## **APPENDICES**

**APPENDIX A**  
**Recruitment Circular**

## RESEARCH PARTICIPANTS NEEDED

Are you a **VOCATIONAL SPECIALIST?**

OR

**AN EMPLOYER OF YOUNG ADULTS WITH AUTISM?**

**Do you know someone who is?**

You may be eligible to participate in a research study about improving career opportunities for individuals with Autism

### **Eligibility Requirements:**

- Employed in South Florida
- A vocational education specialist
- An employer of individuals with Autism ages 18 and over

### **Project Summary:**

- The researcher asks for your **PARTICIPATION IN A 25 MINUTE SEMI-STRUCTURED INTERVIEW THROUGH EMAIL OR AUDIO-TAPED INTERVIEW** via **face-to-face, phone, or virtual (i.e. Skype)**
- The study aims to determine the effectiveness of current vocational programs for young adults with Autism (ages 18 and over) in a large urban county in South Florida
- Interviews collected will be analyze current vocational programs and to identify areas needing improvement
- The researcher hopes are to improve current vocational curriculums and employment opportunities

**Benefits:** Although there is no specific benefit in participation, participants will have the opportunity to directly influence a vocational training program by voicing their opinions and concerns.

There will be **no risks** associated with this study. The researcher ensures complete confidentiality for the entire duration of the study and thereafter. The names of vocational specialists, employers, students, and businesses will not be revealed or used for the duration for the study and thereafter. The participant may stop the interview at any time, and audio-tape will be destroyed.

**For more information, please contact:**

Phone: [REDACTED]

Email: [REDACTED]

**APPENDIX B**

**Informed Consent and Confidentiality Agreement**

**INFORMED CONSENT & CONFIDENTIALITY AGREEMENT**

Please Read the confidentiality agreement and initial and sign below

( \_\_\_\_\_ ) I understand the purpose of this study

( \_\_\_\_\_ ) I understand my information will remain confidential and all aspects of my participation will be confidential for the duration of this study

( \_\_\_\_\_ ) I understand that no student names will be used throughout this study

( \_\_\_\_\_ ) I understand that all material recorded and or transcribed will remain confidential for the duration of this study. Emails and audio-taped interviews will be deleted immediately after confirming transcription

( \_\_\_\_\_ ) I understand that the contents of the consent forms, audio interview tapes can only be discussed with the researcher

( \_\_\_\_\_ ) I understand that I cannot keep and or distribute copies or notes of this interview

( \_\_\_\_\_ ) I understand that the interview and relevant files concerning the research participants will be deleted from the stored password protected computer two years after the completion of this study

( \_\_\_\_\_ ) I understand that my response will contribute to a pool of numerical or anecdotal data with the potential of being incorporated in a dissertation and or research publication

( \_\_\_\_\_ ) I understand that I can withdraw from this research study at any time

Name of Interviewee: \_\_\_\_\_

Signature of Interviewee: \_\_\_\_\_

Date: \_\_\_\_\_

Name of Interviewer: \_\_\_\_\_

Signature of Interviewer: \_\_\_\_\_

Date: \_\_\_\_\_

**APPENDIX C**

**Vocational Education Specialists and Employers of Individuals with ASD Semi-Structured  
Interview Questions**

### **Vocational Education Specialists Semi-Structured Interview Questions**

1. What makes vocational education training successful for individuals with ASD to find employment?
2. Explain your experience with training students with ASD to be able to gain employment.
3. What aspect convinces you that individuals with ASD are capable of fulfilling employment responsibilities successfully?
4. Before obtaining employment what effective vocational education strategies do you implement to facilitate employment?
5. Over the year what has been the greatest challenges with vocational education training?
6. Which aspects need improvement and why?
7. Could you recommend an employer who you have had positive experiences with, in regards to hiring individuals with ASD?

### **Employer Semi-Structured Interview Questions**

1. What makes you different to other companies, in regards to employing individuals with ASD?
2. Are there advantages to having employees with ASD? Why?
3. How do you think the mindset could be changed for other companies who currently do not employ individuals with ASD?
4. How do you support your employees with ASD?
5. Would you wish you would have or receive more support from community partners in regards to your employees with ASD if so, how?
6. How often do you provide training to enhance their skills?
7. Would you give your employees with ASD a higher position if they would demonstrate growth in the work field? Why or why not?

**APPENDIX D**

**Lynn University Institutional Board Proposal**



**Institutional Review Board**  
3601 North Military Trail  
Boca Raton, FL 33433  
T: 561-237-7407  
561-237-7000 | lynn.edu  
Robert W. Reich, D.BA, Chair

**DATE: May 20, 2018**

**TO: Cecile Heinze**  
**FROM: Robert Reich**  
**PROJECT NUMBER: 18.08**

**PROTOCOL TITLE: Perceptions of Vocational Education Specialists and employees of Adults with Autism Spectrum**  
**PROJECT TYPE: Practicion Research**

**REVIEW TYPE: Resubmission**  
**ACTION: Approved**  
**APPROVAL DATE: 5-20-18**  
**EXPIRATION DATE: 5-20-19**

Condition: All names and data of subjects interviewed and subjects spoken of are protected and not identifiable

Thank you for your submission for this research study. The Lynn University IRB has APPROVED your New Project. This approval is in accordance with 45 CFR §46.111 Criteria for IRB approval of research. All research must be conducted in accordance with this approved submission.

It is important that you retain this letter for your records and present upon request to necessary parties.

- This approval is valid for one year. **IRB Form 4: Application to Continue (Renew) a Previously Approved Project** will be required prior to the expiration date if this project will continue beyond one year.
- Please note that any revision to previously approved materials or procedures must be approved by the IRB before it is initiated. Please submit **IRB Form 5 Application for Procedural Revisions of or Changes in Research Protocol and/or Informed Consent Form 1 of a Previously Approved Project** for this procedure.
- All serious and unexpected adverse events must be reported to the IRB. Please use **IRB Form 6 Report of Unexpected Adverse Event, Serious Injury or Death** for this procedure.
- At the completion of your data collection, please submit **IRB Form 8 IRB Report of Termination of Project**.

If you have any questions or comments about this correspondence, please contact the chair of the Lynn University IRB, Robert Reich ( [REDACTED] )

Institutional Review Board  
Lynn University  
3601 North Military Trail  
Boca Raton, FL 33433  
T: 561-237-7407  
561-237-7000 | lynn.edu

## **APPENDIX E**

### **An Employer's Guide for Integrating Employees with Autism Spectrum Disorder**

# AN EMPLOYER'S GUIDE FOR INTEGRATING EMPLOYEES WITH AUTISM SPECTRUM DISORDER

MARIECÉCILE HEINZE



The information contained within this guide is for educational purposes only. This guide should not be disassembled. It is not permitted to copy, print, or disseminate this guide without the consent of the author. Images used were obtained using n2y SymbolSTIX PRIME.

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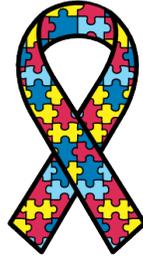
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**“If you’ve met one individual with autism, you’ve met one individual with autism.”**

**-Dr. Stephen Shore**

## What is Autism?



The CDC (Center for Disease Control) defines ASD (autism spectrum disorder) as a neurodevelopmental disorder recognized by impairments in:

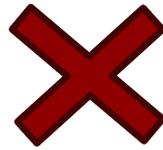
1. Verbal and non-verbal communication
  2. Social interactions
  3. Repetitive behaviors
- ❖ The exact cause of ASD has yet to be determined, however numerous influential risk factors (like genetic, environmental, and prenatal abnormalities) have been identified that may contribute to neurocognitive manifestations (CDC, 2017).
  - ❖ The diagnosis of ASD is classified based from the standards of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V).

### IMPORTANT



ASD has a broad range. The word “spectrum” is important to pay attention to. Every individual is unique. It is important to keep in mind that the “one size fits all” approach is not appropriate.

## Misconceptions



- ❖ People with ASD are not able to feel emotions or able to read emotions-Despite individuals with ASD having difficulties reading body language they are able to be empathetic when emotions are being directly explained and expressed to them
- ❖ Every individual with ASD is a savant
- ❖ Autism is caused by the “refrigerator mother” a theory stating that the child was not nurtured enough and maternal warmth was absent (Deslauriers, 1967)
- ❖ Individuals with Autism are just plain rude. *\*In reality, they are often misunderstood due to their forwardness which can be perceived as offensive*
- ❖ Individuals with ASD can grow out of it

## You're Hired!



Why is it important to learn about the best procedures of hiring and helping individuals with ASD maintain their employment? Individuals with ASD can have many talents, many of them you might not recognize at first glance. If you take the initiative to advance yourself in how to understand, lead, and include individuals with ASD in your business, you might have the fortunate opportunity to gain a loyal, committed, and talented member on your team.

Unfortunately, more often than not, adults with ASD are not provided with these opportunities in part due to an unsuccessful interview because of misunderstood behavior.

According to research, businesses who take the time to get to know their employees have a higher success rate compared to their competitors due to knowing how to communicate with them, motivate them and accept them for whom they are they in return get committed and loyal personnel (Mitchell, 2013).

***\*It is not expected of you to do all of the recommendations in this guide. If you implement a few, you will come to find that they have tremendous positive effects on you and your business.***

## Did you know?

- ❖ The prevalence of ASD is increasing annually. Presently, one in sixty-eight children are diagnosed with ASD, and are prevalent in all racial, ethnic, and socioeconomic groups (CDC, 2017).
- ❖ Employing people with ASD is a gateway for their financial independence, health insurance, benefits, and social interaction (Roux, Shattuck, Rast, Rava, & Anderson, 2015).
- ❖ Big companies such as Microsoft and SAP are hiring people with ASD

### Identified Prevalence of Autism Spectrum Disorder

Surveillance Year	Birth Year	Number of ADDM Sites Reporting	Prevalence per 1000 Children	This is about 1 in X Children
2000	1992	6	6.7	1 in 150
2002	1994	14	6.6	1 in 150
2004	1996	8	8.0	1 in 125
2006	1998	11	9.0	1 in 110
2008	2000	14	11.3	1 in 88
2010	2002	11	14.7	1 in 68
2012	2004	11	14.6	1 in 68

NOTE: All data adapted from the Centers for Disease Control and Prevention (CDC, 2017).

## Potential Skills of Employees with ASD

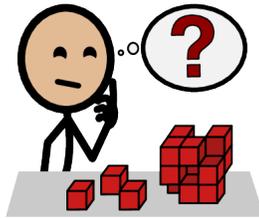


- ❖ Attention to detail
- ❖ Problem solving skills
- ❖ Creative art/design/marketing
- ❖ Repetitive sorting/organizing
- ❖ Long-term memory
- ❖ Repetition and routine
- ❖ Accuracy
- ❖ Strong logic and analytical skills
- ❖ Knowledge of specialized fields
- ❖ Loyalty
- ❖ Honesty
- ❖ Consistency
- ❖ Perseverance
- ❖ Directness
- ❖ Technical skills
- ❖ Janitorial/cleaning skills

***And so much more!***

According to the Forbes article “The Benefits Of Employing People With Autism” from May of 2018, a top tip for hiring someone with ASD is to “check whether your job description is relevant to the job. If it’s a job with minimal personal communication, then is there a need for excellent inter-personal skills? Make sure that the language you use in the job description is unambiguous (Higginbottom, 2018).”

## Potential Challenges with Employees with ASD



- ❖ Not knowing how to do small talk
- ❖ Talking the same way to clients and supervisors as they would to peers
- ❖ Minimal or no eye contact
- ❖ Minimal or no smiling
- ❖ Tendency to interrupt
- ❖ Have difficulty understanding social cues/body language
- ❖ Ending conversations by walking away
- ❖ May make statements or comments that come across as offensive
- ❖ Difficulty with central coherence and executive function

**\*Note that not all people with ASD will have all or any of these challenges**

## Theory of Mind



Theories such as Theory of Mind (ToM), Weak Central Cohesion (WCC), and Executive Functioning are vital theories that predict specific traits in individuals with ASD. Those theories often transmit into the workforce of individuals with ASD, which makes it difficult for them to gain or maintain employment (Merrill, 2015). Lack of behavioral and social deficits can hinder many future opportunities.

Characteristics such as being systematic, non-empathetic, facing difficulties understanding the difference between fact and fiction, fixation on details, and the challenge of following multi step directions are all strong indications that can hinder a work experience, and therefore obstruct the wellbeing of an individual with ASDs (Holwerda et al., 2012). **Vocational education training can prohibit these deficits by modeling, training and practicing the desired skill sets that are necessary in an appropriate work environment (Holwerda et al., 2012).**

Theory	Rational	Literature
Theory of Mind (ToM)	ToM is the ability to attribute various mental states ( <i>i.e.</i> beliefs, desires, intents) to oneself, and the understanding that individuals have different mental states from their own. They become “blind” to the mental states of others.	Povinelli, 1996
Weak Central Cohesion (WCC)	Individuals with ASD are said to have difficulty with integrating information at different levels. In addition, they are more detail-oriented, and therefore might have difficulty understanding context or the meaning of stories.	Merrill, 2015
Executive Functioning Disorder	Individuals with ASD demonstrate deficits when it comes to complex tasks and abstract concepts such as planning, problem solving and verbal reasoning.	Merrill, 2015

**“The most interesting people you’ll find are ones that don’t fit into your average cardboard box. They’ll make what they need, they’ll make their own boxes.”**

**-Dr. Temple Grandin**

## Interviews

When you receive applications and resumes, you will most likely have no idea from all these applicants who has ASD. The Americans with Disabilities Act (ADA) protects individuals with mental and/or physical impairments against discrimination in employment. ADA Title 1-Employment states that businesses with more than fifteen employees are obligated to provide individuals with disabilities an equivalent of opportunity and not discriminate in any privileges of employment. Questions regarding the disability is not allowed until after a job offer is made. When hired, accommodations are expected to be made by the employer for physical or mental limitations (A Guide to Disability Rights Laws, 2017).



## The Interview Process



Whenever you give an interview and you feel that the individual might be struggling with comprehending long verbal questions, lengthy pauses between answers, and/or seems distracted, offer interview questions in a written format. **Many individuals with ASD do better when they can see what is expected vs. just receiving auditory questions or information.**

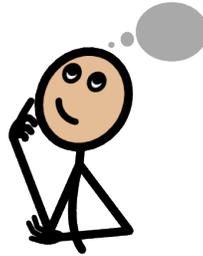
**Patience is key.** Give a moment to the individual to let them gather their thoughts before they speak. Sometimes situations may arise where individuals easily get distracted or perhaps focus on one specific object in the room. You can either mention to the interviewee that you noticed their interest in the particular object and show personal interest by asking a question to create a welcoming environment. Once briefly spoken about it, redirect the conversation back to your interview questions and/or discreetly remove the object out of sight and proceed.

Some individuals with ASD might start rambling or are easily sidetracked. You can kindly redirect the conversation back to your questions or topic when needed.

When asking individuals with ASD about providing examples or experience, it can be very helpful to provide these questions in a written format including visuals. **Rephrasing questions** can also be helpful in many instances.

## What are visuals?

Visuals would be anything a person can visually see that explains through images to them the expected or desired behaviors to fulfill. A visual that directly causes a physical response.



### Remember

1. Have patience
2. Create a welcoming environment
3. Provide visual interview questions
4. Rephrase questions when interviewee is struggling

## Your New Employee



During the initial phase before your employee has started his new job position, **provide your employee a handbook with detailed descriptions of rules and regulations, preferably with photographs.**

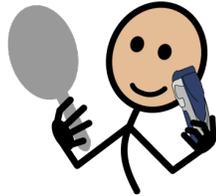
It would be helpful to **also provide precise job rules and expectations.** An example has been provided for you of a list with corresponding visuals on the following page.

### Rules

1. Personal hygiene



2. Clean shaven



3. Clean and tidy uniform



4. Arrive to work on time



5. Notify employer 24 hours prior when you are not coming to work



6. Do not accept tips from customers



**“Everybody is a genius, but if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.”**

**-Albert Einstein**

## Getting to Know Your Employee

If you take the initiative to get to know your employee, you will benefit in the end by having more productive and successful days. You will know exactly how to communicate to your employee and what will motivate him/her the most which will also increase work productivity.

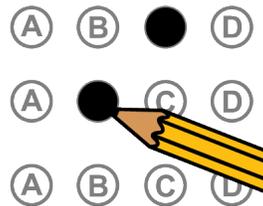
This communication can transfer over to your neurotypical employees as well, and benefit your managerial team, as shown in Microsoft's experience:

“Our mission is to empower *everyone* in the organization. We need a diverse workforce including people with autism and we need to make better products that work for everyone. We're also seeing the benefits for the managers who are becoming better people managers by providing more feedback and asking about communication styles. More and more managers are getting that feedback and that is a benefit that we continue to look at (Higginbottom, 2018).”

Individuals with ASD do well with visuals and might require repetitive explanations and/or reminders. To make your job easier and prevent frustrating incidents for your employee with ASD, it's best for get to know them. Then you will learn them the best way possible to guide them. This will save you a lot of time in the long run, and will make you and your employee very happy.

After the initial interview and welcoming the individual with ASD on your team, you can provide the following ways to get to know your new employee.

### A Multiple Intelligence Quiz



Such as Meyer Briggs.

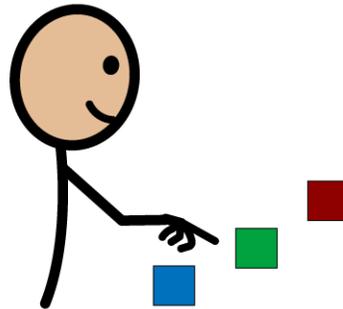
What is Meyer Briggs? And how is it helpful?

Personality refers to individual differences in characteristic patterns of thinking, perception, feeling and behaving (APA., 2018). Swiss psychiatrist C. G. Jung proposed that individuals commonly lack self perception, which involves the awareness of things, people, happenings, or ideas (Jung, C. G., 1951). This directly compromises one's judgment, as it draws conclusions about what has been perceived (Jung, C. G., 1951). Jung theorized that as people differ systematically in perception and how they formulate conclusions, it is feasible for them to differ additionally in their reactions, values, interests, motivations, and skills (Jung, C. G., 1951).

The aim of the Myers-Briggs Personality Test Indicator (MBTI) is to identify the four dichotomies implicit in Jung's theory, and to create 16 distinctive personality types resulting from interactions among the individual's preferences (MBTI basics, 2018).

If you should be interested in delivering a Meyer Briggs quiz to your employee, please visit [www.16personalities.com](http://www.16personalities.com).

## Preference Assessment



### What is a preference assessment and how can it help you?

A preference assessment is most commonly used in ABA (applied behavior analysis). The assessment determines what exactly rewards (reinforces) an individual the most. By knowing this information, you as the employer have indications as to what motivates/drives your employee and can use this information to gear your employee in the right direction in terms of increasing or maintaining their motivation.

You can then use the responses to get a feeling as to what the individual enjoys the most and use that information in conversations or as bonuses after a great delivery of a project. This assessment requires specific guidelines to follow and therefore, would be more beneficial to follow through when/if hiring a board certified behavior analyst.

You can also ask your employee with ASD to create a preference list.

### Preference List in Order

Provide a sheet with preferences on them for your employee to rank 1-8. 1 being the lowest and 8 the highest can provide you great insight about your employees' preferences and initiatives you can take to motivate them either with providing incentives or having a conversation with them based on their preferences or knowing how to relate job expectations with tying examples with their preferences.

*\*Example on the following page*

### Preference List:

Please rate 1-8. (1 being your lowest preference and 8 your highest)

\_\_\_ Money

\_\_\_ Traveling

\_\_\_ Dining out

\_\_\_ Cooking

\_\_\_ Movies

\_\_\_ Books

\_\_\_ Verbal Affirmation from supervisor or peers

\_\_\_ Athletic activities

\_\_\_ Other \_\_\_\_\_

## Worksheets



**“All About Me”** worksheets are another way you can get to know the background of your employee and what his or her interests are.

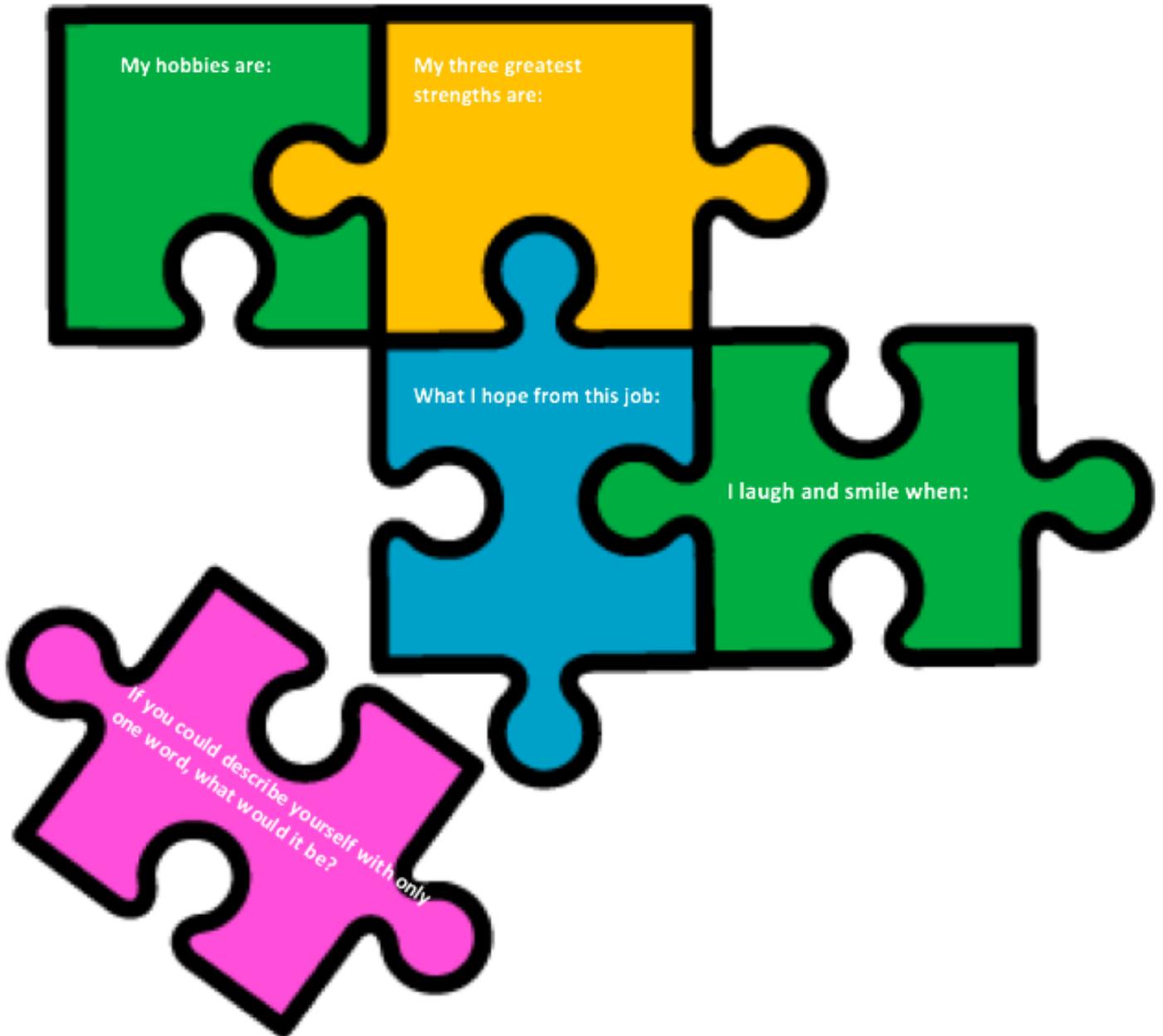
Creating a connection and a place of trust is vital. In addition, down the road when you feel that you have to correct a behavior or provide constructive criticism it will be possible for you to provide encouraging words to break the ice or to give examples that relate to the employees' interests to make it easier for them to understand and relate to.

In addition, this can provide you with insight as to how your employee spends their free time (possibly a hobby or talent). It could help you determine the best suitable job position for them and help your company flourish.

*Example on the following page*

Because every unique piece makes the puzzle complete

Please fill out and return to your supervisor



## Instructional Strategies

### Role Playing



If you want to convey a specific job-related message, it can be useful to role play with another coworker in front of the individual with ASD. It is one of the most beneficial ways of teaching desired behavior. You could then let your employee with ASD role play with either you or a coworker before they are expected to reenact the desired behavior with clients.



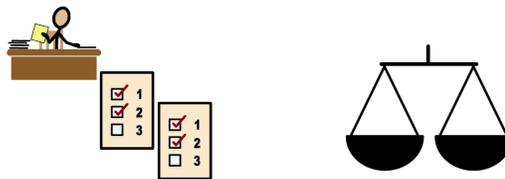
Pair up your employee with ASD with a veteran employee for guidance and support. Have them meet at the place of business prior to work.

**Important:** clearly written guidelines/rules should be delivered as to when and how it is appropriate to contact the veteran employee such as what hours, what days of the week, only in the business location, only questions about work are permitted, etc.

## More Tips



Inform staff coworkers about what autism is, what to expect and how they are able to help and support. Go over no-discrimination regulations and policies.



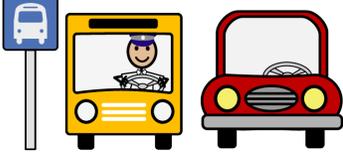
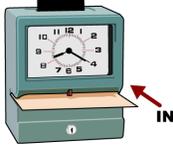
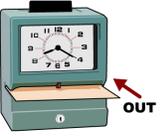
### Use a Visual Job Schedule

A visual schedule is a visual support strategy for an individual to comprehend what will happen and when. You, as an employer can determine if you would like your employee with ASD to have a visual schedule of a day, week, or month. A visual schedule demonstrates step by step typically, with a time what is expected from them next.

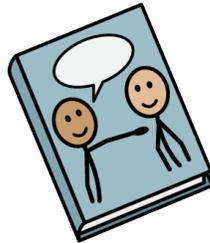
Visual Schedules can include things your employee with ASD could do prior to coming to work to ensure him/her arriving on time and being prepared.

In addition, there can be found visual schedules on bracelets or lanyards that can be custom made.

**Example:**

<p>7:15AM</p>	 <p>Shower</p>  <p>Put on clean</p>
<p>7:40AM</p>	 <p>Breakfast</p>
<p>8:00AM</p>	 <p>Drive to work</p>
<p>8:20AM</p>	 <p>On time</p>  <p>Clock in</p>
<p>8:30M</p>	 <p>Work</p>
<p>11:30AM</p>	 <p>Break/lunch</p>
<p>12:30PM</p>	 <p>Work</p>
<p>3:00PM</p>	 <p>End of shift</p>  <p>Clock out</p>
<p>3:10PM</p>	 <p>Driving home</p>

## Social Stories



Social stories are constructed and used to prepare or educate individuals with ASD for public events or other matters. Social stories can be personalized as much as needed for the individual. It is there for them to understand social interactions, communications and expected behavior better. It teaches social relevant cues by modeling socially appropriate behavior.

You can easily order a custom made social story that is suitable to your business and provides a job description for your employee with ASD Such as at [www. AutismWhisperer.com](http://www.AutismWhisperer.com).

***Example on the following page***

# Let's Go To Work!

fast food

Let's go to work!

story by The Autism Whisperer™ Laura Behrendt © Feb. 2018  
Boardmaker Symbols © Mayer-Johnson, 1981-2018

I also need to make sure I have showered, my hair is combed, I'm wearing deodorant and my teeth are brushed.

grooming

I

need

to

b  
be

sure

I

=  
am

groomed.

9

Greeting customers with a smile makes them feel welcome. Being friendly to customers will make them want to back.

smile and greet customers

Greet

customers

with

a  
a

smile

&  
and

b  
be

friendly.

10

Treating coworkers with respect and working as a team is part of a job as well.

working

b  
Be

respectful

to

coworkers

work

as

a  
a

team.

11

If I receive instructions from my boss I am confused about, I need to ask them to explain so I can do the job correctly.

What should I do?

?  
if

I

=  
am

confused

I

ask

for

help.

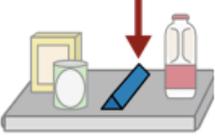
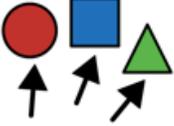
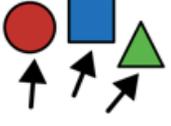
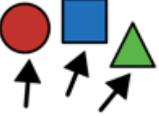
12

(The Autism Whisperer,2018)

### Task Analysis

Task analysis is a visual or written process of breaking down skills into smaller components. Some skills might be too large or complex to teach an individual with ASD all at once. Therefore, applying task analysis gives the individual with ASD the opportunity to learn lengthy and complex tasks in smaller more manageable steps.

#### Example of Task Analysis for Job Position: **Bagger**

<p>Grocery Bagger</p> 	<p>Smile</p> 	<p>Recognize new customer by bar</p> 	<p>Say: "Welcome" "How are you today?"</p> 	<p>Say: "Did you find everything you need?"</p> 	<p>Unfold grocery bags</p> 
<p>Move customers cart in your direction</p> 	<p>Look out on different food categories i.e. hot, cold, frozen, soft, hard etc.</p> 	<p>Sort</p> 	<p>Frozen Food</p> 	<p>Sort</p> 	<p>Fresh food</p> 
<p>Sort</p> 	<p>Hard supplies</p> 	<p>Place items in bags</p> 	<p>Say "Thank you for coming"</p> 	<p>Say "Would you like help bringing out your cart?"</p> 	

## Checklists



Checklists can be of great help to individuals with ASD. They can be lists of items that need to be completed at work, or they could be recognized as reminders.

Checklists aid in preventing employees from asking questions repeatedly to supervisors or co-workers. It's a great self-management skill set as well. It requires the individual with ASD to take responsibility and plan accordingly.

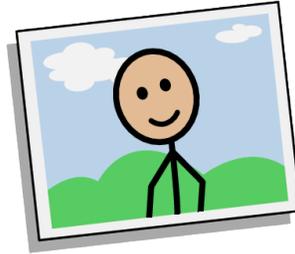
You provide a list of the tasks that need to be completed and ask your employee to complete them one after the other and place a check mark after each one is completed.

### Example:

- ✓ Get all orders of bananas from the cooler
- ✓ Stack all boxes of banana
- ✓ Sort the bananas from the good and the bad
- ✓ Place the good bananas in the store (fruit section)

## Motivating your employees

### Employee Recognition “Bragging wall”



A **brag wall** can be of great benefit to you. It is a wall that presents all employees' photographs along with descriptions of their hard earned work by recognizing them with awards. It can boost your employee's confidence. By recognizing your employees and their hard work and accomplishments you are increasing their future motivation. Not only would your employee receive recognition from you but from their co-workers, increasing everyone's motivation to work hard in hopes to accomplish receiving recognition to be on the wall.

Step 1: Take a picture of your employee

Step 2: Print the photo with description, as to what your employee accomplished and what makes them unique

Step 3: Hang their picture on your wall

### Immediate Reinforcement Upon Task Completion



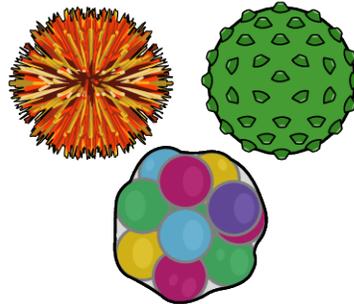
It can be very beneficial to you, if you are able to reinforce e.g. praise your employee with ASD right after a positive and quick task completion, especially if he should have struggled with it in the past.

Reinforcing right after a positive outcome or desired behavior will increase the chances of the same behavior occurring again. An individual is more driven to repeat whatever they were praised/reinforced for as the task has become a positive experience for them. The task was paired with a reinforce which makes it positive.

Please remember, visual or tangible reinforcers are more understood and might have a more sufficient impact than verbal reinforcers.

## Additional Strategies for the Workplace

### Provide Sensory Input Objects for Body Movements

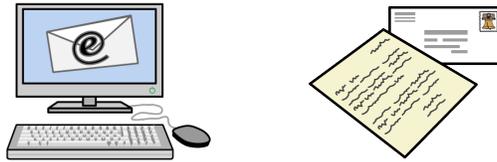


You might have noticed that some individuals with ASD tend to fidget or flap their hands when they are excited. Providing sensory tangibles diminishes fidgeting and helps promote concentration. You or your employee with ASD can easily find and purchase great sensory objects in many stores such as Target, Walmart, Dollar Tree, or Amazon.

**A few examples of these sensory objects are:**

- ❖ Hand spinners
- ❖ Slush ball
- ❖ Fidget bracelet
- ❖ Chew necklace

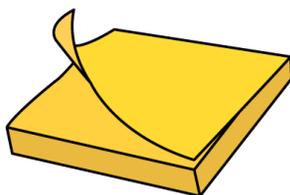
## Weekly Meetings



**Schedule weekly meetings with your employee,** the veteran employee they were paired with, and other supervisors. **Provide feedback.** A great strategy to use is the ‘sandwich’ strategy which involves a compliment, a constructive criticism, and a compliment.

This guarantees the message to be brought across the most gentle and respectful way. It is a good idea to send or give a written reminder prior to each meeting.

### Positive Note or Quotes



Once a week, you can provide a note that entails a positive comment, quote or compliment. It should demonstrate direct meaning and use clear communication.

#### Example of clear communication:

“Thank you for coming in on time.”

“I appreciate your hard work stacking the shelves.”

“I really like how you greet our customers.”

“I appreciate your excellent attendance record.”

“You are a very respected member of our business; we enjoy having you work for us.”

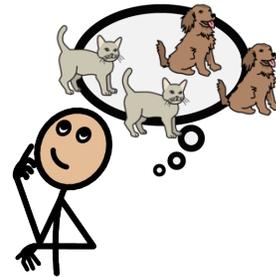
It is important to be specific as to what you are praising or thanking for. Individuals with ASD might have difficulty reading between the lines. It's easier for them to understand concrete and direct words. (Best written down)

## Always be Direct and Clear

It is vital for you to provide as much detail as possible when you are directing job expectations and tasks. Individuals with ASD do not necessarily know what you mean when there is a lack of information. Never say something with an implied meaning as it will most likely be misunderstood or not acknowledged. Instead, provide direct statements. Avoid idioms and metaphors. People with ASD are very direct and say exactly what they think or what is happening. When you say an idiom, for many on the spectrum it can be confusing and construed as the literal meaning.

### Example:

“it is raining cats and dogs!” - Idiom

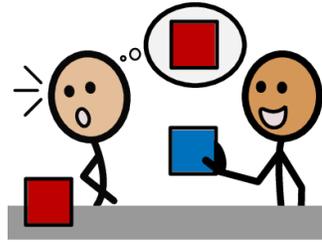


### Instead say:

“It is raining a lot.”- Direct meaning



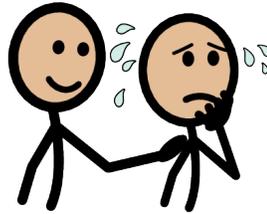
## Work Accommodations



Make physical/environmental office or work accommodations or modifications if you notice that your employee with ASD is easily distracted by a phone ringing, outside traffic, etc.

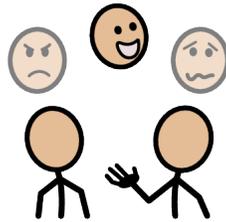
- a. Assign office space with minimal distractions
- b. Provide or ask the employee to bring noise cancellation headphones
- c. Reduce visual distractions such as a visual or auditory-visual stimulus that causes a reduction in attention span, focus, and or productivity e.g. posters, colorful objects, etc.

## Stress Management for Employees with ASD



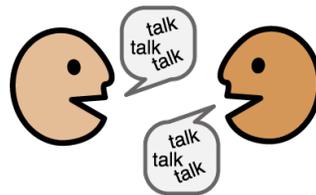
- ❖ Provide direct, concise and realistic time frames and due dates for projects
- ❖ Send or give written reminders of when a due date is approaching
- ❖ Provide a task analysis for employee organization with task expectations and completion timeline
- ❖ Encourage your employee to ask questions. Provide support and guidance
- ❖ Remind your employee of an incentive or reward based on their preference list

## Social Skills



Individuals with ASD often times present challenges in regards to social skills. It may present itself in difficulty with communication, difficulty showing empathy for others, challenges with problem solving and lack of interpersonal skills.

## Communication Skills



If you should notice that your employee with ASD has difficulty communicating with your customers or taking the initiative to greet them or help them. A strategy to implement to make it easier for your employee with ASD to remember what to say to customers would be individualized reminders made according to your needs for your business that could be on a poster, a sticky note, cue card or on an I pad.

Just make sure that they are easily readable (font and size), easily accessible, and key words vs. long sentences. Your employee with ASD should have them with them at all times. In addition, it might be very helpful to your employee to use color coding.

*Example on the following page*

**Example:**



“Good morning/ good afternoon/good evening”



“Welcome to.....”



“How are you today?”



“Can I help you find anything?”



“Please be careful, the floor is wet/ or please watch the step”

**General Key phrases to teach your employee with ASD when customer comes in:**



“Have a great day”



“Thank you for stopping by”



“I hope you were able to find everything you wanted”

**General Key phrases to teach your employee with ASD when customer leaves your store/business:**

**Customer:**  
“Hi, I am looking for an adapter for my phone.”

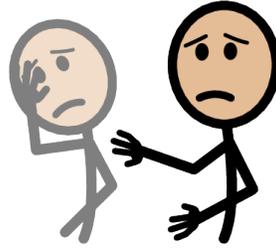


**Employee with ASD:**  
“Yes, follow me please.”



**Employee with ASD ask follow up questions:**  
“How are you today?”  
“Can I help you with anything else today?”

## Empathy Skills



Individuals with ASD often face challenges understanding another person's emotions based on facial expression, body language and/or understand another person's perspective based on what is said. If you should be owning or working in a business to which it is very important that your staff understands empathy, in order to provide better services.

A strategy that you could use to help your employee is to **take photographs of facial gestures or body language or download pictures** from the internet and compile them with descriptions to show what face expression signifies what. Your employee could have it placed somewhere discretely to which he/she could refer to when needed.

*Example on the following page*

**Example:**



Happy



Sad



Silly



Exhausted



Embarrassed



Confused



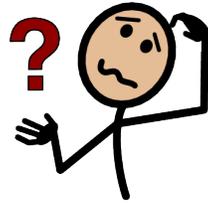
Depressed



Angry

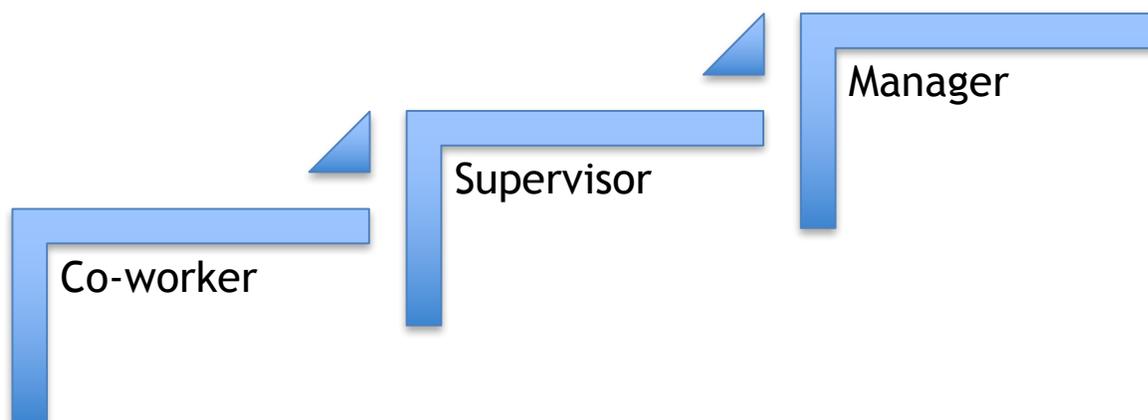


## Problem Solving Skills



Some individuals with ASD have difficulty solving problems. Often times, their focus is on details and therefore, challenges arise when having to look at the bigger picture arises. Often, when situations happen in which individuals with ASD do not know what to do they ask the same question repeatedly. To prevent this matter of happening or taking precautions, it could be effective to inform individuals with ASD as to what to do and to whom to go when they are confused, have questions or need guidance.

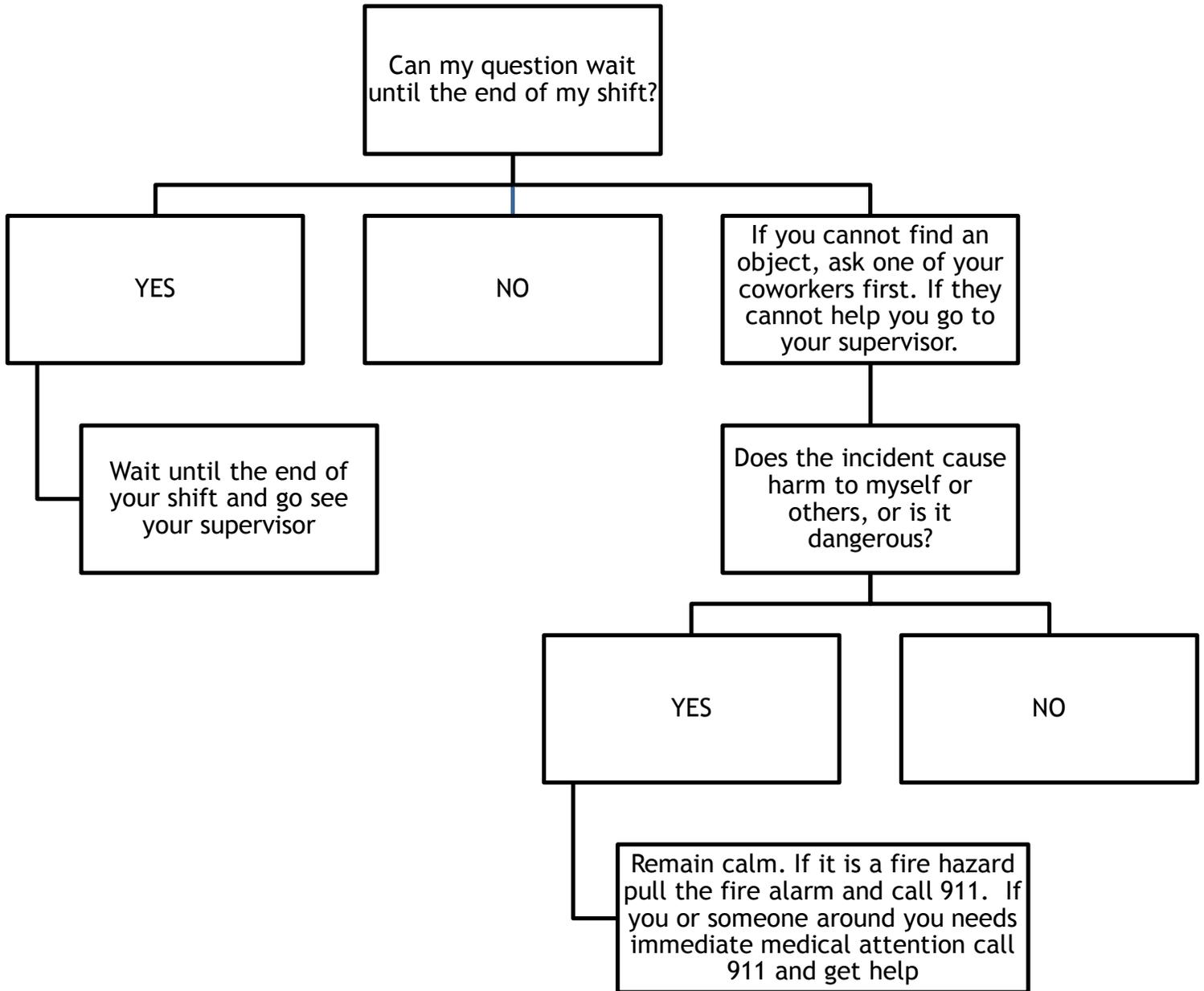
**Following the chain of command is vital in any business:**



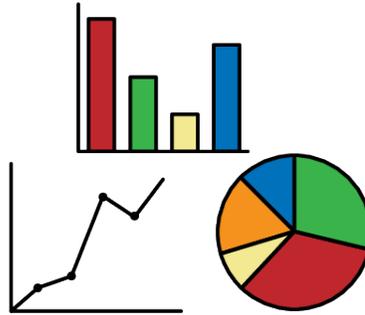
Providing them with a list of questions to self-manage before taking actions could be an antecedent to prevent mishappenings.

*Example on the following page*

Example:



## Applied Behavior Analysis



If you are interested in learning more about applied behavior analysis for your business in order to motivate and guide all your employees the best way possible, you can look into hiring a board certified behavior analyst.

### What is Applied Behavior Analysis?

Applied Behavior Analysis (ABA) is a principle that uses scientific approaches of learning behavior. It uses research-based assessments and strategies to determine what behavior the client is demonstrating how it's managed. Board certified behavior analysts are then able to create interventions to decrease undesired behavior and increase desired behavior.

## Conclusion

Working with employees on the autism spectrum may have its challenges, but with dedication and proper training, it is well worth it. It is most likely that you will end up with a life-long, loyal and committed employee.

Every person is unique, with different strengths. Just remember to have patience, clear standards and an open mind. If you manage to establish a work environment where every individual with ASD is accepted, understood and feels appreciated, he or she will be able to implement their talents, which will be the success for both, the individual with ASD and your business.

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Skills are built not born. This guide is specifically created for any employer in mind who is ready for a true mindset shift, and brake free from the prejudice and fear by recognizing the honest and valuable potential in hiring and in working with individuals with Autism spectrum disorder (ASD).

This guide provides the necessary tools and skills for employers to successfully hire, integrate, and support their employees on the spectrum, leading to ultimate and joint success.