The Role of Communication and Social Skills in Postsecondary Education Programs for Students with Intellectual Disabilities

by

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Abstract

The purpose of the current investigation was to explore the educational missions and priorities of postsecondary education (PSE) programs for individuals with intellectual disabilities (ID), where and how communication and social skills are addressed within these programs of study, and to what extent collaboration with speech-language pathologists (SLPs) is occurring to target these skills. In this investigation, program directors of PSE programs for students with ID were recruited to take a 37-item, web-based, nationally distributed survey. Forty program directors completed the survey. The three current priorities of the programs, although variability to how they are ranked, are employment, socialization, and independent living. Program directors reported that communication skills were consistently targeted when addressing employment and independent living skills. Also, communication skills and self-determination were the two most reported indicators of success for students with ID, demonstrating the need for intervention in these areas and is likely why SLPs were the most frequently selected officials when asked about collaboration. However, over half of program directors reported not having an SLP program affiliated with their institution. Further, of those who did report having an SLP program affiliated with their institution, approximately one-third answered they are not receiving supports from the SLP program at their institution. As SLPs are trained in communication and skilled to work with individuals with ID who have challenges with communication skills, it is important SLPs are collaborating with these PSE programs for students with ID.

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Chapter 1

Introduction

Intellectual disability (ID) is characterized by a childhood onset of significant limitations in both cognitive functioning and adaptive behavior affecting the individual's daily life. The international prevalence of ID affecting individuals ranging from young children to adults is reported to range from .05 to 1.55% (McKenzie, Milton, Smith & Ouellette-Kuntz, 2016). Given the knowledge these individuals have severe challenges in both cognitive functioning and adaptive behavior, there are typically limitations for an individual with ID. There is a current movement progressing away from the medical model, which promotes the idea that the individual has an impairment hindering them from interacting in society with the general population, towards the social model which argues that the individual's impairment is not what hinders them from participating in society. Rather, it is society that causes the disability and limits individuals with ID from participating to their greatest potential (Mitra, 2006; Roush & Sharby, 2011; Oliver & Barnes, 2010; Shakespeare, 2006; Smart & Smart, 2006; Shakespeare, 2010). Growth of the social model aligns with the growth in increasing opportunities for individuals with ID.

ID is likely to affect the individual both in current activities of daily living as well as in future life outcomes. Currently, individuals with ID are less likely to attend postsecondary education, have a job, make above minimum wage in a job, or be considered independent when compared to the rest of the population (Grigal, Hart, &

Migliore, 2011). Challenges tend to be increasingly present when the individual is at a transitional period in their life (Salvador-Carulla et al, 2011).

As opportunities are increasingly appearing for individuals with ID, it is important to examine an event that can be monumental in both transition and in projecting future outcomes in life: postsecondary education (PSE). PSE has numerous potential benefits for those in attendance, with specific emphasis on increased probability of having a job after completion of the program, a higher salary (Baum & Ma, 2007, Bureau of Labor Statistics, 2010; Mischel, Bernstein, & Allegretto, 2007) and living a happier and healthier life (McMahon, 2009). Further, attending PSE is also associated with increased friendships and self-esteem (National Center for Education Statistics, 2006).

Increasingly so, PSE institutions are creating programs for individuals with ID. Although there are different models regarding inclusivity, structure, and type of postsecondary institution, the primary purposes are consistent: employment, independent living, continuing academia, and having social experience while learning social skills (Grigal, Hart, & Weir, 2012; Grigal, Hart, & Weir, 2013; Jones and Goble, 2012; Mock & Love, 2012; Papay & Bambara, 2011; Scheef, 2016). Because of the challenges associated with this population, there are factors that support the program and assist in its ability to succeed, as well as barriers that hinder the growth or even the initiation of the program (Hafner, Moffatt, & Kissa, 2011; Neubert, Moon, & Grigal, 2004; Neubert & Redd, 2008; Plotner & Marshall, 2015; Stodden & Whelley, 2004). There are also individual characteristics that can influence the success and experience of the student with ID in PSE, such as self-determination and self-management skills (Getzel, 2008). Self-determination is defined as “self-awareness (including self-assessment); self-

advocacy (recognizing and acting upon one's rights); self-efficacy (belief that the person can perform an identified task); decision making; and independence (initiating tasks and adjusting goals)" (Dowrick, Getzel, & Briel, 2004, p. 33)

Because language is typically an area of weakness for individuals with ID (Memisevic & Hadzic, 2013), yet is considered critical for success, it is an important factor to examine. Students with ID are likely to demonstrate difficulty with language tasks such as asking for clarification, explaining themselves, and constructing a narrative. This language barrier can hinder their ability to communicate effectively with others. Given the knowledge that adaptive behavior also tends to be a challenge for individuals with ID, using language in an acceptable manner in a variety of environments with a variety of people can prove difficult (Paul & Norbury, 2012). As those with stronger communication and social skills are known to have better employment outcomes (Carter, Austin, and Trainer, 2012), it is important these specific areas of adaptive functioning be addressed in PSE. Therefore, the purpose of this study is to explore the current educational missions and priorities of PSE programs for individuals with ID, as well as to ascertain where and how communication and social skills are addressed within programs of study.

Chapter 2

Review of the Literature

This chapter describes literature relevant to the research purposes of the thesis. It is organized in the following sections: a) Definition of Intellectual Disability, b) Models of Disability, c) Outcomes for Adults with Intellectual Disability, d) Communication and Social Skills in Individuals with Intellectual Disability, e) Postsecondary Education Opportunities, f) Indicators of Success in Postsecondary Education Programs, g) Communication and Social Skills Training in Postsecondary Education Programs

Definition of Intellectual Disability

Intellectual disability (ID) affects approximately one percent of the world's population (American Psychiatric Association, 2013). While there are characteristics inherent to ID, the definition has changed over the years, reflecting changes in a more inclusive society as well as legal advances for those with disabilities (Schalock, Luckasson, & Shogren, 2007). When defining disability, the use of language can be influential to individuals in society as it can guide their interactions with as well as expectations of individuals with ID (Barton, 2009). An ID is essentially characterized by a childhood onset in which an individual has significant limitations in both intellectual functioning, such as problem solving, reasoning, and learning, and adaptive behaviors, such as social skills, used in day to day life (AAIDD, 2013).

The amount of support individuals need in adaptive functioning correlates to the level of severity of the ID, with more support indicating increased severity of

the disability (APA, 2013). Per the DSM-5 (APA, 2013), three domains make up adaptive functioning: conceptual domain, social domain, and practical domain. When examining the domains, the conceptual domain focuses on learning concepts such as money, abstract thinking, and memory; the social domain focuses on communication and social skills; and the practical domain focuses on activities of daily living, such as taking care oneself and employment (Schalock et al., 2010).

Intelligence

When objectively diagnosing an ID, intellectual functioning is best captured by a full-scale or composite score, which is considered to be a general factor of intelligence (APA, 2013; Schalock et al., 2010). Intelligence encompasses comprehending complex ideas, thinking through and solving problems, reasoning through information, planning what to do next, learning from past experiences, and the speed at which an individual learns (Arvey et. al., 1994; Gottfredson, 1997). Quantitatively, to diagnose an individual with ID, their intellectual quotient (IQ) must be two standard deviations below the mean, usually with a score that is less than 70.

Adaptive Behavior

Adaptive behavior and intellectual functioning should be considered equally when determining if an individual should be given the diagnosis of ID, and both components should be assessed thoroughly (Tassé, Luckasson, & Schalock, 2016). The relationship between adaptive behavior and intellectual functioning is correlational rather than causative, as finding a causative relationship between adaptive behavior and intellectual functioning has been clinically challenging (Tassé et al, 2016). In assessing an individual's adaptive behavior capabilities, it is important not to look at the individual's

maximum performance possibility, but instead looking at the individual's typical performance (Luckasson & Schalock, 2015), allowing their day to day needs to be determined with increased efficacy.

Severity of ID

Also impacting the limitations present in individuals with ID is the severity level of their disability, which influences how the individual is affected by ID throughout their life. There are four different severity levels: mild, moderate, severe, and profound. While IQ should be a clinical factor discussed when deciding the severity classification of an individual with ID, it should not be the primary or sole reasoning for choosing a severity level (Salvadir-Carulla et al., 2011). The AAIDD indicates IQ range is an insufficient factor for determining severity level on its own, and other clinical descriptions should be considered in making the classification (Schalock et al, 2010).

It is important to indicate the severity level of ID as it can influence self-determination, potential of living independently, and be useful in conversations between professionals, as the different severity levels can impact the provided services and benefits given to the individual (Salvadir-Carulla et al., 2011). Because reliable cognitive assessments are difficult to give to young children, "unspecified IDD" is the terminology that should be used to diagnose children under 4 years of age who have been determined to have a significant cognitive impairment (Francouer et al., 2010; Lewis, 1985; Salvadir-Carulla et al., 2011; Shevell et al, 2003). The term "other Intellectual Developmental Disorder (IDD)" is used when an individual is older than 4 years of age and their severity level cannot be accurately determined due to additional variables, such as psychiatric

disorders, behavior disorders, sensory impairments, or physical impairments (Salvadir-Carulla et al., 2011).

Assumptions of ID

When applying the AAIID's (2013) definition of ID, certain assumptions must be considered. These assumptions of ID are crucial as they provide clarification with regard to the contexts in which the definition may be applied (Schalock et al., 2007):

1. Limitations in present functioning must be considered within the context of community environments typical of the individual's age peers and culture.
2. Valid assessment considers cultural and linguistic diversity as well as differences in communication, sensory, motor, and behavioral factors.
3. Within an individual, limitations often coexist with strengths.
4. An important purpose of describing limitations is to develop a profile of needed supports.
5. With appropriate personalized supports over a sustained period, the life functioning of the person with intellectual disability generally will improve. (Luckasson et al., 2002, p. 1)

These assumptions highlight the highly individualized nature of ID. They point to the knowledge that while individuals with ID have limitations, they also have strengths. Limitations of the individual should not be recognized with the intention or purpose of holding the individual back. Instead limitations should be recognized for the objective of understanding what supports are necessary to the success of the individual and how to adequately serve these individuals in a way that will best equip them and ensure their life functioning is at its highest potential (Luckasson et al., 2002).

Terminology

There has been a shift moving from the term *mental retardation* (MR) to the term *intellectual disability* (ID) when discussing this population. Although there has been a shift in terminology, both terms encompass the same group of individuals and have the same eligibility requirements (Schalock et al., 2007). This shift in terminology is reflective of the movement in the disability construct that the ID is not a complete trait of the individual that is nonchanging (DeKraai, 2002; Devlieger, Rusch, & Pfeiffer, 2003; Greenspan, 1999). The term *intellectual disability* (ID) is preferred over *mental retardation* (MR) for reasons such as: mirroring the change seen in the construct of disability, to be more consistent with the social model of disability and to focus on individual supports and functional behaviors. ID is perceived to be the less offensive term, and it aligns with terminology being used across the world (Schalock et al., 2007).

Models of Disability

A model of disability is the way in which one views disability, including beliefs and attitudes. While a number of models of disability exist, the most frequently discussed are the medical and social models.

Medical model

The medical model is the traditional manner of viewing disability and identifies disability as being a completely objective condition for which it is necessary to receive treatment (Smart, 2009). The diagnostic/definitional system is seen as a positive of the model as it is easily understood by the general population (Smart, 2009). The medical model sees disability as limited functioning that is a result of deficiency of body structures and/or functions. This impairment can be caused by health conditions, disease,

or injury (Forhan, 2009). Individuals who have disabilities are seen as disabled because they cannot participate in society the same way as an individual who is not disabled (Mitra, 2006; Roush & Sharby, 2011), and as having a problem that is in need of treatment by a medical professional in order to function appropriately in society (Brandon & Pritchard, 2011; Forhan, 2009; Humpage, 2007; Marks, 2000). In the educational setting, the medical model promotes placing individuals with disabilities in separate residential school or in special education classrooms separate from the other students, because it is believed this will promote maximum success (Palmer & Harley, 2012).

The medical model focuses on the diagnoses rather than the individual. Therefore, every individual with the same disability is perceived to have similar needs. No matter the individual's own needs, strengths, desires, and interests, each individual who has the same diagnosis is treated the same way, disregarding the person's individuality (Smart, 2009). It has been claimed that the medical model is the reason individuals with disabilities are discriminated against in society today, and that it is where the prejudice against these individuals began (Smart, 2009).

The medical model leading to society viewing the disability of an individual as a flaw that needs to be fixed unknowingly leads to people with disabilities being discriminated against because of the belief a medical condition defines them. This viewpoint hinders society from being able to separate the disability from the person. Rather, it promotes seeing individuals as their disability and in relation to others who have the same disability. The social model instead shifts the responsibility to society as well as acknowledges the individualistic nature of each person living with a disability.

Social model

A primary tenant of the social model of disability is the belief that individuals with disabilities are not limited by their disability and internal challenges, but by the external barriers that society places upon them. This model externalizes the disability. External barriers limit individuals' ability to fully interact with and contribute to society (Oliver & Barnes, 2010; Shakespeare, 2006; Smart & Smart, 2006). The social model argues the disability is being excluded from society while the physical limitations are an impairment (Shakespeare, 2010). The focus is shifted "away from individual functional limitations to the barriers to social inclusion created by disabling barriers, attitudes, and cultures" (Barnes & Mercer, 2005, p. 530).

Part of what inhibits the performance of people with disabilities is being socially excluded in community events that are seen as valuable; therefore, removing external barriers to community activities would provide increased opportunities for community members with disabilities (Lysaght, Ouellette-Kuntz, & Lin, 2012). Another positive factor of the social model is it has the potential to increase the self-esteem and confidence of individuals with disabilities, who may have been made to feel they were at fault for their disability because of the way society treated them. This model emphasizes that society has inserted barriers into the lives of individuals with disabilities, and it is the responsibility of society to remove those barriers and change their perceptions (Shakespeare, 2010).

Originally, the debate regarding where and how inclusive the education of children with disabilities was called the integration/segregation debate (Oliver & Barnes, 2010). It is not uncommon for students with ID to be separated from their typically

developing peers in day to day life (Kochhar-Bryant, 2007). However, as time goes on, they are becoming more socially involved in their community as contributing members of society, as well as in educational and vocational aspects. Although these opportunities are growing, there are still significant differences between the outcomes in adult-life for individuals with disabilities and their typically developing peers. Students with disabilities are much less likely to graduate from high school, be employed, and live independently (Wagner et al., 2003).

The social model aligns with the development and growth of PSE programs across the world for individuals with disabilities. From a social model perspective, society has limited individuals from attending PSE programs in the past and is a barrier resulting from prejudice and discrimination within society. Therefore, PSE programs were not available to individuals with disabilities not because of the individual's limitations, but because of the limitations placed onto them. Growth and development of PSE programs for individuals with disabilities is moving education away from the medical model and towards the social model.

Outcomes for Adults with Intellectual Disability

Due to challenges individuals with ID face, and the way in which they are viewed by society, individuals with ID tend to have undesirable outcomes in their life with regard to employment, living independently, and in relationships when compared to the general population. Further, when individuals with ID are compared to individuals in other disability categories as a whole, individuals with ID are found less likely to be enrolled in a PSE program, be employed, and when employed, less likely to make more than minimum wage (Grigal et al, 2011). This decreased likelihood of employment leads

individuals with ID to be at an increased risk of infinite poverty, greatly impacting their goals of life (Luecking & Wittenberg, 2009).

It is known that individuals living with an ID will be affected by their disability for the entirety of their life; specifically, during developmental stages and the typical life transitions individuals encounter (Salvadir-Carulla et al, 2011). This is why it is critical to give the necessary individualized supports so their strengths can be highlighted and so their limitations can be given the assistance necessary to improve their quality of life.

Communication and Social Skills in Individuals with Intellectual Disability

When discussing individuals with ID, communication and social skills are imperative to take into account, as these adaptive behavior skills are associated with better long-term outcomes for individuals with disabilities as adults. Carter, Austin, and Trainer (2012) found that students who had little or no difficulty communicating with others were 3 to 4 times as likely to be employed after high school. In addition, students who were highly rated by teachers with regard to social skills were also significantly more likely to be employed.

Because speech and language disorders are more prevalent in individuals with ID (Memisevic & Hadzic, 2013), one of the first indicators a young child has an ID is a delay in the acquisition of language. The challenge is then to determine whether language is progressing as expected given the cognitive abilities of the child (Paul & Norbury, 2012). Being able to use language in an appropriate and acceptable way in a variety of social environments is significant in the life of the individual (Paul & Norbury, 2012). The appropriate use of language across different environments can be challenging for individuals with ID because pragmatic language involves a combination of cognitive,

linguistic, and social-emotional skills, all of which are problematic for individuals with ID. Because of the integration of skills necessary for the appropriate use of language, individuals with ID often develop cognitive skills more quickly than pragmatic skills (Abbeduto & Boudreau, 2004; Abbedutto & Hesketh, 1997).

Even when individuals with ID develop the ability to use language appropriately in social environments, they continue demonstrating difficulty with certain skills, such as requesting clarification, being able to explain what they mean when others do not understand, and telling a logical narrative (Murfett, Powell, & Snow, 2008). When language skills are developed, there remains the possibility of skills not being used in a socially appropriate manner, which can hinder the adaptive behavior of the individual (Paul & Norbury, 2012). In this population, development of literacy is also delayed (Wise, Sevcik, Romski, & Morris, 2010).

The mentioned language challenges make it difficult for individuals with ID to be completely independent. They often have to depend on others to do more work in order to accurately receive their message (Grove & Bunning, 1999). This can be especially difficult when the receiver of the message has a lack of context and knowledge of the individual with ID. When the individual with ID has to rely on someone else to interpret their message, there lies greater risk in their message not being appropriately conveyed in the manner it was intended (Murfett, Powell, & Snow, 2008). This increases the possibility of developing characteristics such as dependency on others to interpret their message, not being able to express when someone has misunderstood the meaning of the message, being unaware of what their own intentions are, having a low level of comprehension, having a limited capacity in which communication can be expressed and

being inconsistent in the way it is expressed, and agreeing with the ideas of someone else even if it is something not originally agreed with (Grove, Bunning, Porter, & Olsson, 1999).

Most individuals with ID encounter these challenges at different levels, further emphasizing the diversity and individuality among the population. These challenges can negatively affect their quality of life by hindering their growth and independence, making these skills ideal targets so the individual can achieve their best level of communication. Along with the negative effect a lack of social skills can have on an individual's quality of life, it can also hinder their ability to receive social acceptance, have an extended interaction with a peer, and have success in their education and career settings (Chadsey-Rusch, 1990; Elliott, 1988; Soresi & Nota, 2000; Walker, Irvin, Noel, & Singer, 1992). With increased ability in social communication, they have the potential for increased social inclusion and self-determination (Nota & Soresi, 2004; Soresi, 2004), which is a critical indicator of whether or not an individual with ID will be able to successfully attend a PSE program. If their ability to be understood is not left to the interpretation of others, their independence can grow tremendously, and their life becomes more their own.

Postsecondary Education Opportunities

The benefits of PSE are numerous. Individuals with a college education are more likely to be employed and have a higher salary over time (Baum, Mah, & Payea, 2013, Bureau of Labor Statistics, 2010; Mischel, Bernstein, & Allegretto, 2007). In addition to the economic benefits associated with PSE, there are other documented benefits, such as better health, longevity, and greater happiness levels (McMahon, 2009) as well as

friendships, professional relations and improved self-esteem (National Center for Education Statistics, 2006). In light of these findings, educational institutions have been working to create PSE programs so students with disabilities can have access to higher education and the opportunity to continue growing their knowledge.

PSE programs, also known as Comprehensive Transition Programs (CTP), for students with ID gives students with ID an opportunity to attend an on-campus collegiate program so they can continue their education and interact with students without disabilities, also known as traditional students (Consortium for PSE for Individuals with Disabilities, 2009). The CTP is defined by the Higher Education Opportunity Act (2008) as being "designed to support students with intellectual disabilities who are seeking to continue academic, career and technical, and independent living instruction at an institution of higher education in order to prepare for gainful employment" (Sec. 760). These students have the opportunity to expand and grow in areas such as academia, social skills, employability, and life skills that lead to independent living (Griffin, McMillan, & Hodapp, 2010). While students with ID have been largely excluded from PSE in the past, these PSE programs provide these individuals with the opportunity to attend college in a way that is nontraditional, but also provides specialized education and training for these students (Hart, Grigal, Sax, Martinez, & Will, 2006). Supports provided can include mentors, residential assistants, and academic tutors (Neubert et al., 2004).

The goals of PSE programs include: allowing students to participate in classes on campus (usually with an audit), be a part of the campus from a social aspect (such as joining clubs and organizations), and potentially, in some cases, living on campus. Although the courses may be audited, the student is expected to fully participate in the

classroom environment and complete the assignments to the best of their ability. The goal of the program is that the courses will teach lessons that will contribute to the overall purpose of the PSE program (Plotner & Marshall, 2014).

Structure of PSE Program for Students with ID and Program Requirements

Enrollment in PSE

Over the recent decades, the enrollment of students with disabilities in PSE programs has continued to increase (Ju, Zeng, & Landmark, 2017). While the National Center for Education Statistics had record of 6% of students with disabilities being enrolled in PSE programs in 1995, the number almost doubled to 11% in 2011 (Riccobono et al., 1997; Snyder & Dillow, 2015). Growth could be attributed to legislation demanding PSE be available to students with disabilities; specifically, with the *Individuals with Disabilities Education Improvement Act (IDEA)* of 2004, which mandated that these students be adequately equipped for higher education before leaving the school system (Ju et al, 2017). There has also been reauthorization of the Higher Education Opportunity Act (HEOA), which works to increase the achievement of students with disabilities throughout their time in K-12 education. The purpose of HEOA is to sufficiently meet the specific needs of all students with disabilities, to increase the amount of PSE programs, to sustain and improve the completion rates of programs already in existence, to better utilize technology available, to train educators in how to use technology properly to assist students, to better educate and train educators in how to best serve students with disabilities, and to help students with ID reach their full academic potential (Council for Exceptional Children, 2009).

While PSE opportunities have continued to grow over the past 15 years for individuals with disabilities (Newman, Wagner, Cameto, Knokey, & Shaver, 2010), students who have ID are represented least in PSE programs when compared to other disability categories (Wagner et al, 2005). Those with ID are less likely than those in any other disability categories to continue their education or become a paid employee after they complete high school (Wagner et al, 2005). Exclusion of individuals with ID from PSE has been found to contribute greatly to the general population's perception of these individuals, what is expected of them, and their overall outcome in life (Grigal et al., 2010).

Eligibility for PSE

The PSE programs differ in their eligibility requirements, and how they determine their requirements is often dependent on the primary focuses of their program (Plotner & Marshall, 2014). There are numerous types of specific criteria that students applying to PSE programs may be required to provide, such as a primary or secondary diagnosis of ID, their current Individualized Education Program (IEP), their current reading level, their history of employment, and letters of recommendation (Plotner & Marshall, 2014). Three skills are consistently reported to be essential to PSE programs surveyed across the country. These skills include the student's ability to follow the code of conduct, possession of safety skills, and an ability to navigate the campus of the institution independently (Grigal et al., 2012). Every PSE program must be accredited before launching so the quality of the program can be ensured.

Models of PSE

PSE programs for students with ID can be provided in a variety of environments with different amounts of inclusivity.

Dual-enrollment. Approximately 1/3 of existing PSE programs allow a dual-enrollment option (Grigal et al., 2012), which allows students to complete high school while simultaneously allowing students to attend a community college with same-aged peers (Hart, Mele-McCarthy, Pasternack, Zimbrich, & Parker, 2004). It focuses on students with IDs who still receive services under the IDEA and are enrolled in the K-12 education system (Hart, Zimbrich, & Parker, 2005). These programs can either be full day PSE experiences or partial day PSE experiences and are typically started by the school (Hart, Grigal, & Weir, 2010). Because students are still eligible for services under IDEA, funding is taken care of. (Hart, Grigal, & Weir, 2010). However, many view PSE programs as those which are attended after the student completes high school (Plotner & Marshall, 2014).

Vocational school. Vocational school focuses on specific employment training. As students with IDs require greater focus on life skills and have different needs when it comes to employment training, classes are typically segregated.

Community college (2-year college)/University (4-year college). Students with ID have been served by both colleges and universities for approximately 30 years across the world (Neubert, Moon, Grigal, & Redd, 2001; Uditsky & Hughson, 2012). There are currently at least 217 PSE initiatives in the United States while a decade ago, less than 1% of 4-year colleges had PSE programs for individuals with disabilities (Think College, 2013). Community colleges have two unique PSE opportunities for individuals with ID.

One model is being inclusive and located on the campus of the institution (Neubert et al., 2002). The other is a non-profit program initiated by the community that is separated from having classes with traditional students and primarily focuses on life and job skills. The community college inclusive model allows social opportunities, the chance to enroll in classes with traditional students, and employment opportunities throughout the community (Redd, 2004). Although a community college may offer less opportunity in terms of inclusion, socialization, employment, and involvement when compared to a university, students still see benefit and appreciate the freedom and opportunity they are allowed in community college as opposed to in high school (Neubert & Moon, 2006).

When families were interviewed about their child with ID attending a PSE program, 36% reported that a 4-year college was their first choice while 22% indicated that a community college was their top choice (Hart, 2006). Students require the opportunity to make decisions for themselves in order to develop self-advocacy, independent living skills, and life skills. However, it is important to note that all individuals with ID require different supports, structure, and atmosphere, and any of these models have the ability to assist an individual with ID in experiencing life benefits, specifically, finding employment (Grigal, Hart, & Weir, 2012).

Inclusivity

PSE programs can also differ with regard to their degree of inclusivity. The PSE programs are separated into three distinct groupings: segregated group, hybrid/mixed group, and inclusive group. These groups differ in the extent in which students with disabilities are provided the opportunity to interact with traditional students (Grigal,

Dwyre, & Davis, 2006; Hart, Grigal, Sax, Martinez, & Will, 2006; Hart et al., 2004; Neubert & Moon, 2006; Stodden & Whelley, 2004).

In a PSE program implementing a segregated model, those with disabilities are not given the opportunity to attend classes with the traditional students and therefore do not have as much interaction with students without disabilities. For the majority of segregated programs, primary objectives include learning life skills, how to be a contributing member of society, and necessary employment skills through holding a part time job (Hart, Mele-McCarthy, Pasternack, Zimbrich, & Parker, 2004). The students in the PSE program have no access to the traditional college courses which traditional students are enrolled in (Grigal, Dwyre, & Davis, 2006).

In a program following a mixed model, although the primary objectives remain to learning necessary life skills, how to contribute to the community, and job skills through holding a part-time job, the students with disabilities are also given the opportunity to take general education classes offered to traditional students. The students with disabilities take their classes exclusively for their program pertaining to independent living and employment skills in addition to being enrolled in classes with the traditional college student (Grigal, Dwyre, & Davis, 2006; Hart, Mele-McCarthy, Pasternack, Zimbrich, & Parker, 2004).

A PSE program involving an inclusive model allows the students with disabilities to participate in any opportunity available for traditional students. However, these students are provided with support that is individualized to their specific needs to assist them in succeeding academically at the PSE level. Employment opportunities may be provided, but employment is not one of the primary objectives of the program, as it

commonly is with both the segregated and mixed model (Hart, Mele-McCarthy, Pasternack, Zimbrich, & Parker, 2004). With this model, individualized supports, such as mentors, are extremely beneficial in the growth and success of the students enrolled in the PSE program (Grigal, Dwyre, & Davis, 2006).

It has been discovered that being in an inclusive class with students with disabilities has an impact on breaking stereotypes regarding individuals with disabilities. In one study, an administrator shared that interactions between students with disabilities and traditional students is "not only important for the growth of the individual, but it radically challenges and changes the stereotypes of others" (Howell, 2010, p. 13). In May's (2012) study, it was found that traditional students having inclusive courses with students with disabilities were found to be more open to diversity than their peers who did not have a class with students with ID.

In Papay and Bambara's (2011) study, 0% of students with ID in a segregated PSE program were taking college classes and 21% of students with disabilities in a mixed/hybrid PSE program were taking college classes. In an inclusive PSE program, 92% of students with disabilities were taking college classes. However, more studies must be done to determine how inclusive versus segregated courses impact outcomes for students with disabilities.

After participating in activities where individuals with and without disabilities are treated as equals, there is shown to be more acceptance of individuals with disabilities by individuals without disabilities. For example, when surveying students involved in the college organization Best Buddies, an organization dedicated to developing friendships with individuals with disabilities, 80% of college students reported they began to not only

have a more positive attitude towards individuals with disabilities, but also came to have an increased understanding regarding everyday challenges of individuals with disabilities (Hardman & Clark, 2006). This example, along with other evidence, implies that activities and experiences demonstrating inclusivity between those with and without disabilities helps to disprove stereotypes of those with disabilities (Bedini, 2000; Devine & Lashua, 2002; Devine & Wilhite, 2000; Novak, Feyes, & Christensen, 2011) as well as assist in developing friendships between individuals with and without disabilities (Bedini, 1993; Edwards & Smith, 1989; Kalyvas & Reid, 2003). This demonstrates that increased time spent practicing inclusion improves the attitudes towards and acceptance of individuals with disabilities by individuals without disabilities. Inclusivity has the potential to not only benefit students with disabilities, but benefit the lives of traditional students as well.

Indicators of Success in Postsecondary Education Programs

Factors influencing program success

Development and implementation of PSE programs involves facing significant challenges. While some factors may facilitate the process, others may serve as barriers. Plotner and Marshall (2015) surveyed program directors with regard to these facilitators (i.e., sources of support) and barriers and found that the majority of program directors are aware of the barriers and challenges they will face at the beginning of the program. However, it is encouraging that most barriers reported are indicated to have less of an influence as others become more familiar with the program. Further the programs are able to apply knowledge learned through experience to adapt as they grow. In addition, all supports or facilitators that were identified to assist the development of new programs

were perceived to be more supportive in the present day than when the program was initiated (Plotner & Marshall, 2015).

Facilitators. Through a review of the literature, Plotner and Marshall (2015) identified six common sources of support for the development of PSE programs. These facilitators included university administration, financial aid, university housing, admissions office, academic departments, and individual faculty (Hafner, Moffatt, & Kissa, 2011; Neubert et al., 2004; Neubert & Redd, 2008; Stodden & Whelley, 2004).

University administration. There are many layers of complexity present when discussing the role of university administration as a support for these PSE programs for students with ID. A couple of these layers were addressed in a study where PSE program faculty, parents, program administrators and teachers were involved in interviews, observations, and reviews of program documentation. First, there are many protocols and rules to follow when the program is being implemented so it may be approved. A second difficulty includes determining the status of the student who is enrolling in the PSE program, whether that be indicating they are in a certificate program or indicating they do not have the status of a student of that institution. However, after exact parameters of the program were developed and administration had a clearer image of the program's plan, administration became supportive of students with ID having the same opportunities and privileges as the traditional student (Thoma, 2013).

Financial aid. While PSE can be expensive for anyone, individuals with ID have the additional burden of potentially not qualifying for financial aid because of not meeting requirements of a traditional student. Families of students with ID have argued that in some cases, their students are not involved in enough course hours each semester

to be eligible to apply for financial aid, increasing the barrier of funding and keeping students from being able to attend PSE (Mock & Love, 2012; Stodden & Whelley, 2004). However, progress is being made in making federal financial aid accessible to those with ID (Grigal, et al, 2012). When financial aid is readily available, this will be a sign of positive support for the program as the student with ID will be assisted in attend the PSE program.

University housing. University housing allows the student to practice independent living skills necessary for them to transition to the real world when leaving the PSE program. While many institutions are still in the process of determining how this is feasible for their program, it is a component deemed as instrumental to the program as it provides the student with the experience to functionally learn independent living skills, and program staff are in the process of working to make it happen (Thoma, 2013).

Admissions office. The admission process is known to vary depending on the PSE program; however, it is known that these programs are consistent in reaching students who do not achieve the academic criteria required by those seeking a traditional degree from the institution (Papay & Bambara, 2011).

Academic departments. It is imperative that institution faculty as a whole have positive attitudes about the program and approach it with a problem-solving and supportive mindset (Stodden & Whelley, 2004). Typically, these programs are determined to be best fit for the School of Education within the institution, likely because these are individuals who have had education involving or worked with individuals with disabilities in the past (Thoma, 2013).

Individual faculty. Individual faculty members have the ability to play a critical role in the development of a PSE program for students with ID. As it is necessary for faculty to teach in different styles to accommodate the different learning styles of their students, it is also necessary to adjust to the learning style of an individual with ID (Stodden & Whelley, 2004). In Plotner and Marshall's (2015) study, it was found that only 3% of PSE directors surveyed found faculty to currently be a major barrier to their program, while 88% answered that individual faculty members and 76% of academic departments were currently either supportive or extremely supportive of their program. In a study researching faculty from nine PSE institutions with students with ID, reports indicated individual faculty responded well when program faculty adequately explained the program, the population of students, the support students would need in the classroom, and the support that could be additionally provided by the program, leading to inclusion in classrooms being more welcome (Thoma, 2013).

Educating faculty on students with disabilities as well as adapting the instruction and curriculum of the courses in a way that will benefit both traditional and non-traditional students has been found to be critical for students to successfully complete PSE programs. All learning styles and types should also be addressed when adapting instruction and curriculum of courses (Getzel, 2008).

Barriers. As a program has facilitators or supports that help it to succeed, a program also has barriers that can hinder or halt development. In a study where program directors were asked about barriers to their program currently as well as at the program's implementation, each barrier category diminished in significance between the implementation of the program and the program at its current time (Plotner & Marshall,

2015). These results indicate that once the program becomes more established at the institution, previous barriers to the program will be lessened and instead often be converted into supports. The results of the study also indicate PSE programs are willing to adapt and be flexible when learning through experience, which can lead to a reduction in the challenges and barriers to the program (Thoma, 2013). This finding can be a source of encouragement to new programs, as it has been seen that program and student familiarity can help minimize both fear and resistance to the program's existence (Plotner & Marshall, 2015). Plotner and Marshall (2015) found the following six common barriers to PSE programs: issues concerning liability, student safety, funding, faculty approval, integrity of institution, and employment (Hafner, Moffatt, & Kissa, 2011; Neubert et al., 2004; Neubert & Redd, 2008; Stodden & Whelley, 2004).

Liability issues. Housing remains an important issue when discussing liability barriers with PSE programs. Proper supervision of the students as well as availability of on campus housing are common issues when the program is developing; however, it is also considered an important obstacle to tackle due to it being an ideal situation that these students would have the opportunity to live on campus like their peers who are traditional college students (Plotner & Marshall, 2014).

Student safety concerns. In Plotner and Marshall's (2015) study, student safety concerns was the answer that most program directors surveyed indicated to be a barrier at the time their program was initiated. However, this number dropped dramatically (from 80% to 52%) when the program directors were asked if student safety concerns were currently a barrier to their PSE program (Plotner & Marshall, 2015). While 52% is still a majority of the program directors, the large decrease in student safety being found as a

barrier to the program indicates that as the program continues, there are less safety concerns for students. Also, the largest proportion of respondents (44%) answered that they held both student and staff meetings where safety issues and concerns were discussed often, suggesting that programs are making student safety a priority they are consistently addressing, making it less of a barrier as concerns are being addressed (Plotner and Marshall, 2015).

Funding issues. While the number of program directors who answered that funding issues was a barrier to the program at the time the program was implemented decreased minimally (77 to 73) when the program directors were asked if funding issues were currently a barrier to the program, the decrease was minimal (Plotner & Marshall, 2015). This could indicate funding issues are likely to remain a barrier to the program even after it is well established, which is an even larger issue due to a majority of the programs being self-supporting, without relying on a host college or university for funding (Plotner & Marshall, 2015). This supports research showing funding is a primary concern when initiating a PSE program for people with disabilities (Mock & Love, 2012). It was indicated in Plotner and Marshall's (2015) study that funding for the program is primarily external, coming from grants and private contributions.

Funding falls into two categories, the ability of the student and their family to pay for the services provided by the PSE program and the program's ability to self-support by providing the resources needed for the students in the program (Mock & Love, 2012). In Grigal, Hart, and Weir's (2012) study where they surveyed individuals working with PSE programs for individuals with disabilities, of their 149 responses from different programs, the majority reported the primary funding option was private payment, with

funds from LEAs, vocational rehabilitation agencies, and scholarships also being reported a significant amount.

Faculty burden. Offices such as the office of the bursar, the office of the registrar, and the office of financial aid collaborate with the PSE program to ensure the course work of the students in the PSE program are counted in course hours so they may be considered full-time students, just as their traditional peers. This is an important requirement for certain grants, such as the Pell Grant (Plotner & Marshall, 2014).

Compromising rigor of institution. Administration of each institution should be made aware that the PSE program does not serve as a way to assist traditional students in finding a way to manipulate the system in seeking a degree; rather serves as an opportunity to present nontraditional students with the opportunity of attending the institution with an unconventional outcome from the college or university (Plotner & Marshall, 2014). The institution need not be concerned about these students lowering their average scores on standardized tests such as the SAT and ACT or the GPA of their incoming students, as this section will not be applicable for the large majority of students with disabilities applying to the PSE program (Plotner & Marshall, 2014).

The PSE program would be required to have an application process that parallels that of the general application process, but adapt it to make an application suitable for the population of students with ID (Plotner & Marshall, 2014). It is important to still mirror the application of the traditional student so domains such as student safety, student expectations, and services offered to every student by the university are not overlooked (Grigal et al., 2012) and so the admissions office has an easier time processing applications (Plotner & Marshall, 2014).

Employment. Although it has been found that having paid employment as a student can predict a positive outcome following completion of the PSE program, finding employment opportunities for the students can be a barrier to those implementing the program (Scheef, 2016). In his 2016 study, Scheef found that only 3% of the programs indicated all of their students with disabilities had a job experience that was paid, and few programs expressed that most of the students in their program had a paid job experience. The primary barriers to finding paid work experience for the students include transportation issues, employer's negative perceptions of individuals with disabilities, scheduling a job in addition to the student's coursework, staff support for job coaching, a lack of available jobs in the community, and over-involvement of family members (Scheef, 2016).

Students may have additional challenges at a place of employment as individuals with ID commonly have "slower than average learning of new tasks, impaired memory, slow and sometimes impaired motor performance, and reluctance to change roles and routines" (Lysaght et al., 2012, p. 412). These challenges may make it difficult for a student to be hired for, as well as maintain, a job. Students may arrive to campus with no prior work experience and a lack of job skills, making it difficult for them to find a job and adjust to working (Dwyre & Deschamps, 2013; Grigal & Hart, 2010). However, there were two categories in which a majority of the respondents indicated was a barrier: transportation issues and negative perceptions held by the employer of people with disabilities. This finding indicates the majority of respondents found 93% of queried items to be a small barrier or not be a barrier at all (Scheef, 2016).

Factors influencing student success

The transition from secondary school to postsecondary school is a significant one. While it is known there is a wide variety of individuals with ID attending a PSE program, there are common characteristics found amongst the majority of students with ID who have been successful in attending a PSE program. A student having a goal of attending a PSE program was a positive indicator of a student with ID being employed (Grigal et al., 2011). Students obtaining work experience while still in high school also was found to be a positive indicator of a student finding work after completing education (Hasazi, Gordon, & Roe, 1985).

Positive indicators for success following secondary education include: career awareness, community experiences, exit exam requirements/high school diploma status, inclusion in general education, interagency collaboration, occupational courses, paid work experience, parental involvement, program of study, self-advocacy/self-determination, self-care/independent living, social skills, student support, transition program, vocational education, and work study (Grigal et al., 2011).

It was found in using Virginia Commonwealth University's (VCU) model that there were four particular factors contributing to a successful transition to a PSE program. Those factors included: increased self-determination skills, applying self-management skills, students having exposure to and knowledge of technology, and the student having experiences related to that of an internship or career. These separate skills link and overlap with one another (Getzel, 2008).

Self-determination. Self-determination is a critical component when predicting success of an individual with ID, whether that involves attending a PSE program or

achieving the skill of living independently (Benitez, Lattimore, & Wehmeyer, 2005; Wehmeyer & Palmer, 2003). A primary way for students with disabilities to exhibit self-determination is knowing their necessary accommodations and having self-advocacy. As the student will most likely encounter situations they must advocate for themselves, it is vital that they learn how to do so and have adequate knowledge of their disability, their rights, and their needs (Stodden & Whelley, 2004). One staff member of a PSE program described how important self-determination was to their students by stating:

> And so we hope to increase self-determination by having students more cognizant of how to participate actively in a meeting and run that meeting and then on a weekly basis in that [class]…we have them establish weekly goals for what they are going to be working on this next week and then every week they review those goals and determine how its working…we look for ways to build this into all that we do" (Thoma, 2013, p. 291).

Self-management. Self-management skills are those which include study skills, time-management, and organizational skills, and have been found to be important in the success of an individual with a disability in PSE (Mull, Sitlington, & Alper, 2001).

Technology. In the current generation, it is essential to have an adequate knowledge of technology in regard to education (e.g. laptops, internet) and social communication (e.g. cell phones). Students with disabilities are often unaware of technology that can assist them in their academics when entering a PSE program (Getzel, McManus, & Briel, 2004). When students are introduced to technology that can assist them in their academic learning, it has the potential to have a positive influence on their

success in PSE, leading to an increased probability of a career outcome more coveted by the student (Burgstahler, 2005; Fichten et al., 2001; Kim-Rupnow & Burgstahler, 2004).

Internships/job experiences. A work experience while in the PSE setting would serve to benefit students with ID, giving them opportunity to apply skills they are learning in the classroom to a real-life work environment (Getzel, 2008). This also has the potential to show students with ID how their education is assisting them in their long-term goal of being employed following completion of the program (Getzel & Kregel, 1996; Briel & Getzel, 2001; 2005).

Peer relationships. Another support that could be instrumental to the success of students with ID in PSE programs is using traditional students in their everyday contexts as peer supports (Westling & Fox, 2009). These natural supports would support the students through their daily activities and ultimately help them to achieve greater independence. Potential natural supports could include support provided in academic, social, vocational, personal development, and community settings.

In the academic setting, the peer support could include helping the student with ID outside of class with their homework and assignments. In the social setting, it may include going to social events with the student with a disability or providing them with social skill support. Vocationally, a natural support may look like acting as a job coach and helping to provide instruction on the task at hand. Personal development can vary from assisting in personal care to assisting with tasks in the dorm room or at home. Lastly, community participation may involve helping the student learn to grocery shop or navigate public transportation (Kelley & Westling, 2013). These supports have the potential to make assistance with tasks more natural, and therefore may be more accepted

by the student, as these supports are provided by peers. The supports can help guide students in their daily life and give them direction in becoming more independent. Also, this support provides a social strength to the program as the students in the PSE program are ensured to have daily interactions with traditional students who may become friends.

These relationships have the potential to impact and influence the behaviors of the students with disabilities as well as provide opportunities for the students to be social by including them in campus and community events (Kelley & Westling, 2013). This also provides the traditional students the opportunity to change their perception of individuals with disabilities to a more positive one, as well as give someone who wants to work with disabilities the opportunity to have experience in the field (Kelley & Westling, 2013).

Aims and Benefits of Postsecondary Education

PSE programs typically address academia, employment, socialization, independent living, and community resources (Grigal et al, 2013; Papay & Bambara, 2011). Although PSE programs typically focus on these primary domains, different programs may target other domains, or prioritize one over the other with three of the most oft-cited domains being employment, socialization, and independent living (Grigal et al, 2012, Jones and Goble, 2012; Mock & Love, 2012; Scheef, 2016). These aims are in keeping with the priorities of students with disabilities who identified the most important reasons for them to attend an inclusive PSE program included:

1. Continuing to learn and develop skills that will benefit them in their life goals of employment, living independently, and developing relationships with others
2. Being able to explore different employment opportunities and further discover what they want their career to be

3. Having the college experience, the opportunity to make friendships, and further develop their social skills

4. To raise awareness that individuals with disabilities should have the opportunity to be involved in inclusive PSE which represents there being both respect and equality for all individuals (Mock & Love, 2012).

PSE programs are capable of creating positive change in the lives of their students. A growing body of research exists with regard to the benefits experienced by participants of PSE, with primary gains being in employment opportunities, social skills, and independent living skills.

Employment. Work and employment are described as "the cultural rite of passage through which one enters into adulthood," (Grossi, Gilbride & Mank, 2014, p. 157) making it difficult for those with disabilities to transition to independence because they are not given the opportunity to do what many take for granted: work (Scheef, 2016). Higher education is essential for the majority of individuals seeking employment, as it was expected that by 2018, PSE would be required by 63% of jobs.

Results of Arc's (2011) survey, inquiring about the employment of individuals with ID, indicated that only 15% of individuals with ID were employed either full-time or part-time. Of the 15% of individuals with ID that were employed, a majority worked in an environment that was not integrated, rather than working in an environment that was inclusive with coworkers who do not have a disability. An individual has an increased likelihood of employment if they completed any type of PSE (Zafft, Hart & Zimbrich, 2004). However, traditionally, those with ID have been withheld from participating in PSE, further hindering their likelihood of employment upon entering adulthood (Gilmore,

Schuster, Zafft & Hart, 2001; Hart, Zafft & Zimbrich, 2001). A majority of all high school graduates continue into PSE after completing high school, while only 37% of students with a disability continue into PSE after high school (Blackorby & Wagner, 1996).

There are five reasons work is important for individuals with disabilities:

1. It is typical of adults in the community to work and it sets them apart as different if they do not.
2. Working is a right for people with disabilities that is protected by the law.
3. It provides the opportunity for people with disabilities to become financially independent and promote their economic well-being.
4. Upward job mobility is possible with inclusive employment.
5. It can help to increase both the self-dignity and the positive self-image of individuals with disabilities (Wehman, 2010).

Individuals with disabilities may have increased quality of life through employment, including increased self-esteem, locus of control, psychological well-being, and social networks. Nonetheless, employment still has the ability to provide people with disabilities the possibility of "demonstrating skills and competencies and for formulating friendships" (Wagner, Newman, Cameto, Garza, & Levine, 2005, p. 5-1).

Lent and Brown (2013) provide five reasons that individuals want to work and the benefits they may receive from employment:

1. It fulfills needs.
2. It builds a public identity or label.

3. It helps the individual to develop their own self-identity and impacts how they see themselves.
4. It enables them to meet what society expects them to contribute.
5. It can provide structure and keep people occupied for their time, which can benefit mental health.

Individuals with disabilities receive these same benefits, yet in 2017, while the employment rate for individuals without a disability was 65.7%, the employment rate for individuals with a disability was only 18.7% (Bureau of Labor Statistics, 2018), demonstrating the decreased probability of employment when an individual has a disability. It therefore stands to reason that employment be a primary aim of PSE for individuals with ID.

Program Aims. In a survey of PSE employees, results indicated it was of highest priority of PSE program directors for students with disabilities to complete the program with improved social skills as well as improved competitive employment (Scheef, 2016). Further, it was found that not a single respondent of the survey indicated that improved competitive employment was not a priority of the program or a low priority of the program. This indicates that personnel working with a PSE program for students with disabilities indicated that improved competitive employment was at least a moderate priority. In a survey conducted by Papay and Bambara (2011), 90% of program directors responded that employment was a reason that the students with ID were attending the PSE program.

Additionally, in Grigal, Hart, and Weir's (2012) study where faculty of PSE programs (149 respondents) for students with ID were surveyed across the country,

employment was reported to be addressed in the program by a majority of participants, specifically focusing on training or preparing for a job/career. Ways that students can be supported in their employment include "job shadowing, situational assessment, person-centered planning, job development, and placement services, job coaching, transportation, and natural supports" (Grigal et al, 2012, p. 232). In Scheef's (2016) study, it was found that a large majority of those working with the program believe when the students with disabilities complete the program, they will find and keep paid employment. Employment was also found to be an important program component to parents of students in a PSE program. The results of these indicate that employment should be viewed as the primary outcome for students in PSE programs and given priority (Griffin et al, 2010).

Benefits. Students with ID in a PSE program have been found to have an increased probability of being employed as well as, on average, an increased salary starting rate (Grigal & Hart, 2010). Smith et al (2013) found in their study that having PSE would give an individual with a cognitive disability an increased probability of becoming employed, as 43% of students with a disability who had some PSE were employed as opposed to only 31% that did not attend PSE. Specifically, a study completed at Taft College found that 84% of the students in its program for students with ID, Transition to Independent Living, graduated the program and left with paid employment (Ross et al., 2013). Given the increased show in employment for individuals with ID who have completed a PSE program, it is important to include these individuals in higher education by providing them with more opportunities to partake.

As students that have completed a PSE program have an increased probability of employment after completion of the program, it is also important to note the relationship found between higher levels of self-determination and increased likelihood of becoming enrolled in a PSE program (Test et al., 2013). There are new challenges and adaptions that have to be made in daily life regarding any student transitioning into PSE, and the challenges and adaptions that have to be made are only increased for students with ID, illustrating the increased need for a high level of self-determination. Although a high level of self-determination is essential to develop in secondary education, it is vital to continue this growth once the student transitions into the PSE program (Getzel, 2008).

Social skills. Appropriate social skills are imperative for individuals and can vary depending on the environment, communication partner, and situation, making it a skill that must be both adaptable and flexible. Social skills are often challenging for individuals with ID. In a survey of parents of students in PSE programs, the majority recognized the reality that inclusive PSE programs would be key in providing a natural avenue for their children to make friendships, participate in activities with same aged peers, and develop necessary social skills for their daily life (Mock & Love, 2012). When one parent of a student with a disability was asked about the importance of inclusive PSE for their child as well as others with disabilities, they remarked, "[This is an] opportunity for my daughter with severe disabilities to experience college life, just as her sister without disabilities is doing. She is meeting many of the students on campus and those students have reported that they appreciate having gotten to know her. She is continuing to grow in many ways because of going to college" (Mock & Love, 2012, p. 293).

Program Aims. In a study surveying PSE programs serving students with ID, the largest portion of the 149 respondents from programs across the country reported offering social skills training. This answer was selected more than independent living skills and access to academic courses (credit and non-credit), indicating the weight which social skills training holds in the success of a student with ID (Grigal et al, 2012).

It has been found to be beneficial for the students to have mentors, and further, for these mentors to have more than a work relationship with them. It is important for mentors to also spend time socializing with their mentee in order for a strong bond to develop between the mentor and the student with a disability (Jones & Goble, 2012). Students in the PSE program have been shown to benefit from developing friendships and feel they are a part of an equal and mutual friendship, which has also been validated by traditional students (Jones & Goble, 2012).

Benefits. In Griffin et al.'s (2012) study, it was found that students who have interacted more with people with disabilities are more willing to interact with people with disabilities, students who took a class with students with disabilities obtained a more positive view of people with disabilities, and students that reported having greater comfort with individuals with disabilities were found more likely to see the benefits that come with inclusion in the PSE setting. As the mentors and students became more comfortable with one another and friendships became more meaningful, the mentors indicated that differences were not as apparent between themselves and the student with ID (Jones & Goble, 2012). Benefits are not only for the students with ID, as it has been suggested that when students with disabilities and traditional students interact, that traditional students may be more likely to have more positive and less prejudiced

attitudes towards individuals with disabilities as well as stimulate growth in both social and personal development (May, 2012).

Independent living. An important aspect of an individual's transition to adulthood is living independently, or at least without parents or guardians participating in a supervising role. However, it is common for individuals with ID to never gain the skills or have the opportunity to live independently, making them dependent on another individual and not in control of their own life and decisions.

Program Aims. When choosing a singular primary focus of their program, respondents most often expressed emphasis on independent living and life skills (34%) (Grigal, Hart, & Weir, 2012), indicating that obtaining adequate skills in independent living is viewed as essential to these programs. In Scheef's (2016) survey of PSE program employees, a majority of the PSE program personnel indicated that it was a high priority for the program's students to complete the program with improved independent living skills.

Benefits. Independent living skills are commonly targeted in a PSE program for individuals with disabilities because individuals with ID are less likely to live on their own than typically developing individuals. A large majority of individuals with ID have been found to live with their parents or other family members, and only a small portion live on their own (Larson, Doljanac, & Lakin, 2005). Specifically, data found in National Core Indicators (2009) and National Council on Disability (2011) found that approximately 16% of individuals with ID/DD live independently, which in this survey was defined as being in an independent home/apartment or being in an apartment program. Participating in a PSE program, however, is associated with a greater likelihood

of living independently (Migliore & Butterworth, 2009; Newman et al, 2011). Ross and colleagues (2013), surveyed 125 individuals with ID who had completed the PSE program at Taft College and found that 94% reported living on their own or with a roommate where they either rented or owned their living facility. This finding indicates that individuals with ID continue to apply the knowledge they learned in their PSE program to their life after the completion of the program. However, it should be noted that although research has indicated the need to discover outcomes of individuals with ID following completion of PSE, there are few actual findings regarding outcomes. In a study to increase knowledge of PSE programs, it was found that the majority of institutions offered instruction both in social skills (62%) and independent living and life skills (61%), serving to further emphasize the importance of these constructs (Grigal et al., 2012).

Communication and Social Skills Training in Postsecondary Education

Communication and social skills are areas of adaptive functioning that are typically areas of weakness for individuals with ID. These are also areas that, when improved, are capable of bringing positive change for these students. Parents of students with disabilities, peer mentors, as well as the students themselves, have indicated they view socialization to be a vital part of the overall college experience (Jones & Goble, 2012). When queried about what was necessary to fully participate on a college campus, one student with a disability stated, "[I need] effective communication; really understanding what I need and am entitled to regarding my disability and issues related to it so I can get it and be successful early…[this means] talking to the person, not the mom

or anyone else" (Mock & Love, 2012). This emphasizes that having self-determination and the ability to accurately communicate is important to the individual with ID. Building communication skills is essential to developing as a person, successfully learning in the classroom, being an engaged participant in the community, and having a successful career (Morreale & Pearson, 2008). In Morreale and Pearson's (2008) systematic review of the literature, communication education was significantly related to holding a successful career. When employers are asked what skills are most in demand when recruiting employees, interpersonal skills and general communication skills are at the top of the list (Cline, 2005; Foxworth, 2001; Tucker & McCarthy, 2001; Weir, 2006).

In a study where 330 employers were polled inquiring about the employee trait they desire most, 96% reported communication and interpersonal skills as their first choice (Cline, 2005). Listening, building interpersonal relationships, and resolving conflict have also been determined skills employers search for in a candidate (Clement, 2001; Hynes et al., 2002; Nelson, 2002; Robbins, 2007) Critical thinking, problem solving, and interpersonal relations are also important skills that employers desire (Clement, 2001). In career advancement, the most important skills reported are oral communication and written communication (Booher, 2005).

The "communication imperative, " which was declared by the USA Commissioner for the Administration on Developmental Disabilities "Every person, regardless of the severity of his/her disabilities, has the right and the ability to communicate with others, express every day preferences and exercise at least some control over his or her daily life. Each individual, therefore, should be given the chance, training, technology, respect and encouragement to do so" (Crossley, 1999, p. 11).

Communication intervention is an important topic which permeates through many areas of discussed outcomes, including employment, socialization, and independent living.

While literature supports positive outcomes related to PSE resulting in improvement in social skills, there is currently a lack of information on positive gains in communication itself as a result of PSE. As communication is an integral aspect of social skills and individuals with ID typically have challenges in this area, it is important to consider how PSE is affecting the individual's communication abilities and effectiveness, what programs are doing to accomplish this growth, and ways in which PSE programs can increasingly stimulate this growth. Communication is an area which permeates into others, as increased effectiveness in communication is likely to benefit areas across the life of the individual, in relationships with peers, family, and coworkers. There are skills learned when an individual attends PSE, such as communication and problem solving, that are important in everyday life. As individuals with ID typically have difficulty in the areas of problem solving and communication, increased support can greatly impact their life (Leonhardt, 2011; Long, 2011).

In addition, the degree to which programs prioritize and address communication skills within PSE programs, as well as how they address communication skills, has not been explored in the literature. The way in which programs address communication skills is important specifically for this population, because social communication skills are typically delayed in individuals with ID. Because these are areas in which individuals with disabilities tend to have challenges, focusing on these skills is essential because improving these areas can result in positive outcomes for these students (Carter et al., 2012). However, while literature supports that social skills are prioritized by a majority of

PSE programs for students with ID, it has not been determined how completion of PSE can result in social and communication gains for these individuals. Therefore, it is vital to determine exactly how PSE programs are prioritizing social and communication skills and the ways in which these skills are being supported and addressed.

Chapter 3

Justification

As illustrated by the literature, PSE has numerous benefits for all individuals, and individuals with an ID are no exception (Baum, Mah, & Payea, 2013, Bureau of Labor Statistics, 2010; Carter et al., 2012; Leonhardt, 2011; Long, 2011; McMahon, 2009; Mischel, Bernstein, & Allegretto, 2007; National Center for Education Statistics, 2006). As society continues to progress to a social model of disability, opportunities increase for individuals with ID. Outcomes of individuals with ID who attend a PSE program consistently show an increase in employment (Griffin et al, 2010; Grigal & Hart, 2010; Ross et al., 2013; Scheef, 2016; Smith et al., 2013; Zafft, Hart & Zimbrich, 2004), independent living (Migliore & Butterworth, 2009; Newman et al, 2011; Ross et al., 2013), and social/communication skills (Jones & Goble, 2012; Mock & Love, 2012; May, 2012) upon completion of the program.

Language is an area that those with ID typically have significant challenges, which affects the adaptive behavior skills of the individual (AAIDD, 2013; de la Vega et al, 2013; Goldberg et al., 2009; Matson & Nebel-Schwalm, 2007; Murfett, Powell, & Snow, 2008; Paul & Norbury, 2012). As all three domains of adaptive functioning (i.e. conceptual, social, and practical) can be influenced by language ability and use, it stands to reason that any deficits in communication could have a significant impact on the benefits received from the PSE program and should therefore be addressed within the curriculum (Paul & Norbury, 2012). What remains to be seen is the extent and manner in

which communication and social skills are addressed in PSE programs. The purpose of this study is to explore the current educational missions and priorities of PSE programs for individuals with ID, as well as to ascertain where and how communication and social skills are addressed within the current programs of study. The questions of the study are delineated below.

Questions of the Study

1. Across programs, what are the most commonly reported missions among the PSE programs for people with ID?
2. What do program directors view as facilitators and barriers to program implementation?
3. What student characteristics do program coordinators view as contributing to success in the PSE program?
4. What are the typically reported outcomes of PSE programs as they relate to employment, independent living, and social skills?
5. How prioritized are communication and social skills by PSE programs?
6. How are communication and social skills being addressed by PSE programs?
7. To what extent are PSE programs collaborating with speech-language pathology program faculty and students at their universities?

Chapter 4

Method

Participants

A total of 40 participants completed the survey and met the inclusion criteria of being a director of PSE program (or equivalent position) for one year or more. Participants were from states representing the four main demographic regions of the United States: South (59%; *n* = 22), Midwest (31%; *n* = 11), Northeast (3%; *n* = 1), and West (16%; *n* = 6; See Table 1)

When asked how long they have been in their leadership position, over half of participants reported between 1-5 years (68%; *n* = 27), followed by 6-10 years (25%; *n* = 10), and more than 10 years (8%; *n* = 3). With regard to the length of time the program has been in existence, the largest number of participants reported their program has been in existence for 6-10 years (40%; *n* = 16), followed by 3-5 years (23%; *n* = 9) and more than 10 years (23%; *n* = 9). Therefore, the majority of program directors reported their program being in existence for greater than 5 years. The remaining 15% (*n* = 6) reported their program beginning less than 3 years ago.

Materials

To answer the questions of the investigation, the investigators created a web-based, 37-item survey via Qualtrics software (see Appendix A) to address questions in 5 main areas: (a) Participant Background, (b) Program Background, (c) Facilitators and

Barriers to Postsecondary Education Programs, (d) Program Aims and Factors Affecting Student Success, and (e) Collaborative Opportunities

- Part I questions were used to obtain information on the background of the participants. As such, the aim was to learn about each person's educational and professional histories.
- Part II questions inquired as to the background of the program. Questions addressed the programs missions, goals, and historical student composition.
- Part III questions addressed the program directors' perceptions as to potential facilitators and barriers to PSE opportunities for students with disabilities.
- Part IV questions addressed the anticipated students, as they pertained to three main aims of PSE programs: employment, social skills, and independent living. Program directors were then queried as to within-student factors that influence their success in PSE.
- Part V questions obtained information on the program directors' perceptions as to the specific communication needs of their students, as well as whether programs were collaborating with speech-language pathologists to address these needs.

Procedure

Before large-scale dissemination of the survey, the current instrument was piloted with a faculty member at a university who is familiar with survey research, as well as a director of a PSE program at the primary investigator's home university. This individual was ineligible to participate in the study as she has less than one full academic year of experience as a program director. This faculty member provided feedback in order to improve the content, structure, and validity of the survey. Once the survey was finalized,

participants were obtained by two methods, both approved by the Auburn University Institutional Review Board. For the first method of recruitment, an email with an attached information letter and embedded email link was sent to 244 program directors of postsecondary education programs for students with disabilities for which emails were found.

Table 1

States in which programs reside

Area of Program	*n* (%)
South	
Alabama	3 (8)
Arkansas	1 (3)
Delaware	1 (3)
Florida	4 (10)
Georgia	3 (8)
Louisiana	2 (5)
Maryland	1 (3)
North Carolina	1 (3)
South Carolina	2 (5)
Tennessee	1 (3)
Texas	3 (8)
Midwest	
Illinois	3 (8)
Indiana	1 (3)
Iowa	1 (3)
North Dakota	1 (3)
Ohio	3 (8)
South Dakota	1 (3)
Wisconsin	1 (3)
Northeast	
Vermont	1 (3)
West	
California	3 (8)
Nevada	1 (3)
Utah	2 (5)

Note: *n* = number of respondents; % = percentage of respondents

These emails were found at thinkcollege.net, which includes the information for 284 college programs for students with intellectual disabilities. Program directors then read the attached information letter and were taken to the survey upon indicating agreement on the statement "Click here to take the survey." A second email was sent to all program directors within five weeks of the first email to remind program directors of the survey. In addition, the PSE director who assisted in piloting the survey forwarded a copy of the information letter to potential participants met while at an inclusive higher education conference. Program directors were still able to read the attached information letter and then select “Click here to take the survey” to indicate agreement.

The survey was administered with the on-line survey tool Qualtrics, a secure internet-based software program. Each question in the survey was optional and the participant was allowed to stop the survey at any time. All data was collected anonymously and further analyzed using Qualtrics. Participants were informed that all responses were confidential and no personal identifying information would be included in the computer-generated dataset other than the date and time they complete the online survey.

Chapter 5

Results

Data Analysis

Results were filtered for completion and analyzed via Qualtrics. Frequency distributions were used by reporting percentages and *n*'s for responses for the research questions. In cases where some participants chose not to respond to a question, mean responses were calculated using the number of participants who responded to that item rather than the number who completed the survey.

Background Information

With regard to the type of higher education institution where the PSE programs resided, the majority of programs were 4-year colleges/universities (65%; $n = 26$), with smaller numbers reported for community/junior colleges (30%; $n = 12$) and career school, technical school, or vocational/trade school (5%; $n = 2$). Further describing their program, the majority of participants answered that their program was best described as a mixed/hybrid program (53%; $n = 21$), followed by totally inclusive programs and (33%; $n = 13$) and segregated programs (15%; $n = 6$).

When queried as to housing options, the majority of participants reported that housing was not available to their students (58%; $n = 23$). However, when available ($n = 17$), the most reported housing option by participants was on-campus university housing (25%; $n = 10$), followed by the option of both off-campus and on-campus housing (15%; n = 6), with one participant reporting the option of only off-campus housing (3%).

With regard to the program's typical enrollment goals, the large majority (97%; *n* = 39) reported an enrollment goal of greater than 5 students, with most participants (88%; *n* = 35) answering that they typically met their enrollment goal. However, of the 12% (*n* = 5) that reported they do not typically meet their enrollment goal, the primary reason was reported to be recruitment (80%; *n* = 4), followed by funding (20%; *n* = 1), with no participants indicating it was due to faculty participation. When asked the number of students currently enrolled in the program, the most common answer was between 11 to 20 students (43%; *n* = 17), followed by greater than 30 students (25%; *n* = 10), between 6 to 10 students (20%; *n* = 8), and between 21 to 30 students (13%; *n* = 5), with none of the participants indicating their program had only 1-5 students. The programs varied in length with the majority of programs being a total of 2 years (55%; *n* = 22). The second most common length of time for a program reported by participants was 4 years (17.5%; *n* = 7), followed closely by 3 years (15%; *n* = 6), with only one program director answering their program was 1 year (3%) and one program director answering their program was more than four years in total (3%). There were three program directors (8%) that selected "If other, please explain," with two of the programs having both a two year and a four year option, and the other program director answering their "classes can be taken individually and are usually 12 weeks long."

Program directors were then queried about the current primary funding source of their program. The 38 respondents most commonly answered "Program Participant Tuition" (47%; *n* = 18), followed by "External funding-grants" (32%; *n* = 12), "External funding-private contributions" (11%; *n* = 4) and "University funds" (11%; *n* = 4). Of the 36 program directors that reported the percentage of their students that receive financial

aid to attend the PSE program using a sliding scale, there was a range from 0% of students receiving financial aid to 100% of students receiving financial aid, with the mean calculation of respondents being 36% (*SD* = 36). The majority of the 38 program directors who responded indicated that their program was a Comprehensive Transition Program (CTP; 55%; *n* = 21), with the remaining 17 program directors (45%) indicating their program was not a CTP. When program directors were asked about the sources of the financial aid their program receives, over half of respondents reported they receive financial aid from the Federal Pell Grant and by scholarships (see Table 2).

Table 2

Sources of financial aid

Sources of Financial Aid	*n* (%)
Federal Pell Grant	22 (55)
Federal Supplemental Educational Opportunity Grant	6 (15)
Federal Work-Study Program	10 (25)
Federal Student Loans	2 (5)
Private Student Loans	6 (15)
Grants	10 (25)
Scholarships	25 (63)
Medicaid Waiver	4 (10)
Vocational Rehabilitation	19 (48)
Other	7 (18)

Note: *n* = number of respondents; % = percentage of respondents

Program Missions

Program directors were then queried as to how they would rate goals considered most important to their program (1) to goals considered to be of least importance (3) out of the following goals: Employment, Independent Living, and Socialization. A mean score was attributed to each goal calculated from the ranking each of the 39 participants

who answered this question gave each goal. Numbers closer to 1 indicated more participants answering the goal was of greater importance and numbers closer to 3 indicated more participants answering the goal was of less importance. Using the mean score calculated from the reports of program directors, employment was considered to be of greatest importance (M = 1.41, SD = .68) followed by socialization (M = 2.21, SD = .65), which was followed by independent living (M = 2.36, SD = .77).

Facilitators and Barriers to Program Implementation

To determine what program directors considered to be supports to their PSE program, participants were asked to select whether the following components supplied limited support, adequate support, or substantial support: academic departments, admissions office, administration, financial aid, individual faculty, and university housing. Over half of participants reported that university housing provided limited support, and that academic departments and administration provided adequate support. Just under half of respondents indicated individual faculty were of substantial support (see Table 3).

When participants were asked to indicate which facilitator they considered to be of greatest assistance to their program, the most common answer reported by program directors was individual faculty (28%; n = 11). This answer was followed by the facilitators of administration (23%; n = 9), academic departments (18%; n = 7), university housing (13%; n = 5), financial aid services (5%; n = 2), and admissions office (3%; n = 1). There were 5 participants (13%) that reported the greatest facilitator to their program was not listed and opted to write in an answer. These facilitators included, campus employers, support from “the Board”, university registrar, undergraduate peer mentors

and program staff, and student affairs/services. The large majority of program directors that answered this question indicated that the facilitators they selected strengthened as the program matured (97%; *n* = 37), while the remaining (3%; *n* = 1) indicated that their facilitators had weakened.

Table 3

Program Supports

Components	Limited Support *n* (%)	Adequate Support *n* (%)	Substantial Support *n* (%)
• Academic departments	9 (23)	21 (54)	9 (23)
• Admissions office	8 (21)	18 (46)	13 (33)
• Administration	4 (10)	21 (54)	14 (36)
• Financial aid	16 (42)	13 (34)	9 (24)
• Individual faculty	4 (10)	16 (41)	19 (49)
• University housing	19 (54)	6 (17)	10 (29)

Note: *n* = number of respondents; % = percentage of respondents

Participants were then asked if the following components were considered barriers in implementing their PSE program: compromising rigor of institution, employment, faculty, funding, liability, and student safety. Program directors then selected if each was considered a barrier or not considered a barrier. Over three-quarters of participants reported that funding was a barrier, and over three-quarters of participants reported compromising rigor of their institution, faculty, liability, and student safety were not considered barriers (see Table 4).

When participants were asked to indicate which barrier they considered to be the greatest to their program, the majority of participants reported funding (65%; *n* = 26), with the remaining participants reporting employment (13%; *n* = 5), compromising rigor of institution (3%; *n* = 1), faculty (3%; *n* = 1), and student safety (3%; *n* = 1).

Table 4

Program Barriers

Components	Barrier *n* (%)	Not a Barrier *n* (%)
• Compromising rigor of institution	9 (23)	30 (77)
• Employment	13 (35)	24 (65)
• Faculty	5 (13)	33 (87)
• Funding	34 (85)	6 (15)
• Liability	5 (13)	33 (87)
• Student safety	4 (11)	34 (89)

Note: *n* = number of respondents; % = percentage of respondents

There were 6 participants (15%) who reported their own greatest barrier that was not listed. None of the participants selected liability to be their greatest barrier. A majority of program directors indicated that the barriers they selected improved as the program matured (70%; *n* = 28), while less than one-third (30%; *n* = 12) indicated that their barriers had not improved.

Student Characteristics Contributing to Success

Program directors reported whether specific characteristics of a student would make them more likely to be successful, less likely to be successful, or not have an effect on their success. Greater than three-quarters of respondents reported that organizational skills made a student more likely to be successful in the PSE program. Over 90% of program directors reported that the characteristics of communication skills, self-determination, and time-management skills made an individual more likely to be successful in their PSE program (see Table 5).

Table 5

Indicators of success

Characteristics	Less Likely *n* (%)	No Effect *n* (%)	More Likely *n* (%)
• Communication skills	0 (0)	1 (3)	39 (98)
• Self-determination	0 (0)	1 (3)	39 (98)
• Time-management skills	2 (5)	0 (0)	38 (95)
• Organizational skills	6 (16)	0 (0)	32 (84)
• Technological knowledge	10 (26)	3 (8)	26 (67)
• Previous job experience	3 (8)	11 (28)	25 (64)
• Study skills	14 (37)	4 (11)	20 (53)

Note: *n* = number of respondents; % = percentage of respondents

Program Outcomes

Program directors were then asked about the employment history of their students, specifically inquiring the approximate percentage of students that are employed within one year of completion of their program. Participants selected their desired percentage using a sliding scale from 1 to 100. From the 37 participants who answered, a mean answer of 67% (*SD* = 28) was calculated, with the minimum answer from a participant being 0% and the maximum answer from a participant being 100%. Of those participants who indicated employment, they further queried regarding employment of their past students by being asked the percentage of students who have completed their program and have full-time employment and/or earn greater than the federal minimum wage requirement. Program directors used a sliding scale from 1 to 100 to select their intended percentage of students. The mean percentage of students who have completed the program and have full-time employment was calculated to be 40% (*SD* = 29), with 32 participants answering this question. The minimum answer from a participant was 0% and the maximum answer from a participant was 89%. Of the 35 participants who

answered, the mean percentage of students who have completed the program and earn greater than the federal minimum wage requirement was calculated to be 52% (*SD* = 34), with the minimum answer from a participant being 1% and the maximum answer from a participant being 100%. Participants were then asked if independent living was a goal targeted in their program. Slightly under three-quarters of the program directors reported that it was a goal of their program (74%; *n* = 28) while 26% indicated that it was not (*n* = 10).

Additionally, program directors were asked the approximate percentage of students within one year of completion of their program who are living independently. The mean percentage was calculated from the 33 participants who responded, which was 27% (*SD* = 25). The minimum percentage reported by a participant was 0%, while the maximum percentage reported by a participant was 80%. When program directors were asked how they would define the individual as "living independently" and could select more than one answer, the large majority of participants reported that they would use the definition of the individual living independently in his/her own home/apartment with no staff supports (78%; *n* = 31). There were 58% (*n* = 23) of program directors who reported that living independently could be defined as the individual living in the home/apartment with visiting support weekly. This was followed by program directors defining the individual as living independently when in the home/apartment with visiting support daily (43%; *n* = 17), the individual in support living in a home apartment with three or fewer persons (33%; *n* = 13), the individual in a group home with support and four to eight individuals living together (15%; *n* = 6), and a residential facility with nine or more people (10%; *n* = 4).

Program directors were asked to report how likely it is that a student completing their program will improve in a list of social behaviors, to which they had to respond with very unlikely, unlikely, unsure, likely, or very likely. There were no program directors who responded that their students were very unlikely to improve in any social behaviors, with only one program director responding that their students were unlikely to improve in understanding of abstract language. The majority of program directors reported their students were likely to improve in the following social behaviors by the completion of the PSE program: entering/exiting a conversation, exhibiting turn-taking (enjoyable activities, etc.), eye contact, filtering/monitoring language, and following directions. The majority of program participants reported that their students were very likely to improve in developing peer relationships (age-appropriate) and appropriate greetings by the completion of the program (see Table 6).

Prioritization of Communication and Social Skills

Program directors were then asked to indicate the areas they believed additional assistance could benefit their students. Over half of the program directors indicated additional assistance would be beneficial in the areas of transitions, speaking, social skills, problem solving, planning, mental health, independent living, dealing with the unexpected, conversational skills (see Figure 1).

Addressing Communication and Social Skills within the PSE Curriculum

Program directors were asked what areas of communication were targeted when focusing on both employment and independent living to determine the weight of communication training necessary.

Table 6

Likelihood to improve social behaviors

Social Behaviors	Very unlikely *n* (%)	Unlikely *n* (%)	Unsure *n* (%)	Likely *n* (%)	Very likely *n* (%)
• Appropriate greetings	0 (0)	0 (0)	1 (3)	14 (35)	25 (63)
• Developing peer relationships (age-appropriate)	0 (0)	0 (0)	5 (13)	13 (33)	22 (55)
• Adapting to changes in routine	0 (0)	0 (0)	2 (5)	19 (48)	19 (48)
• Broadening of interests (foods, games, etc.)	0 (0)	0 (0)	7 (18)	16 (40)	17 (43)
• Following directions	0 (0)	0 (0)	2 (5)	22 (55)	16 (40)
• Exhibiting turn-taking (enjoyable activities, etc.)	0 (0)	0 (0)	3 (8)	23 (58)	14 (35)
• Eye contact	0 (0)	0 (0)	7 (18)	20 (50)	13 (33)
• Filtering/monitoring language	0 (0)	0 (0)	6 (15)	22 (55)	12 (30)
• Entering/exiting conversation	0 (0)	0 (0)	3 (8)	27 (68)	10 (25)
• Sharing interests of others	0 (0)	0 (0)	9 (23)	24 (60)	7 (18)
• Understanding of abstract language	0 (0)	1 (3)	23 (58)	12 (30)	4 (10)
• Understanding/making jokes	0 (0)	0 (0)	20 (50)	17 (43)	3 (8)

Note: *n* = number of respondents; % = percentage of respondents

When asked about areas of communication targeted when addressing employment, over half of program directors reported written communication, topic relevance, skilled use of multi-media technology, shared decision making, response feedback, organization of thoughts and ideas, oral presentations, communicating with people from diverse backgrounds, and clarity of response. Over three-quarters of program directors indicated they target teamwork, problem solving, oral communication, nonverbal communication (e.g. eye contact, vocal characteristics, physical distance, etc.), interpersonal skills, interaction with other employees, and communicating in work groups when addressing employment. Over 90% of program directors answered that when addressing employment, they target listening communication and interview skills (see Figure 2).

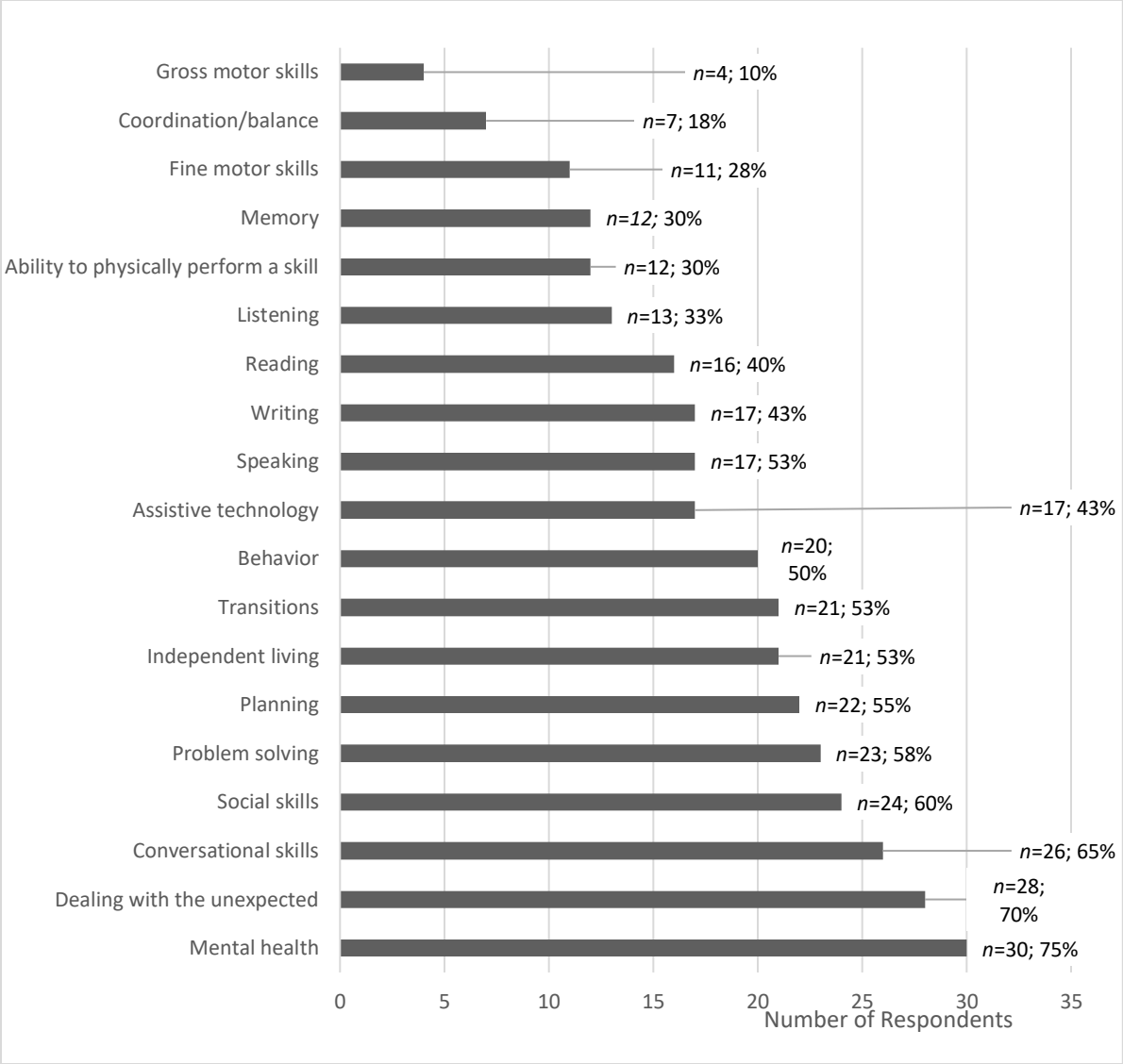

Figure 1. Areas programs could benefit from additional assistance

Program directors were asked to identify the areas of communication that were targeted when they address areas of independent living. Over half of program directors reported that they target conflict resolution, nonverbal communication (e.g. eye contact, vocal characteristics, physical distance, etc.) and written communication when addressing areas of independent living. Over three quarters of program directors reported that when addressing areas of independent living, they target decision making, problem solving, interpersonal skills, listening communication, and oral communication (see Figure 3).

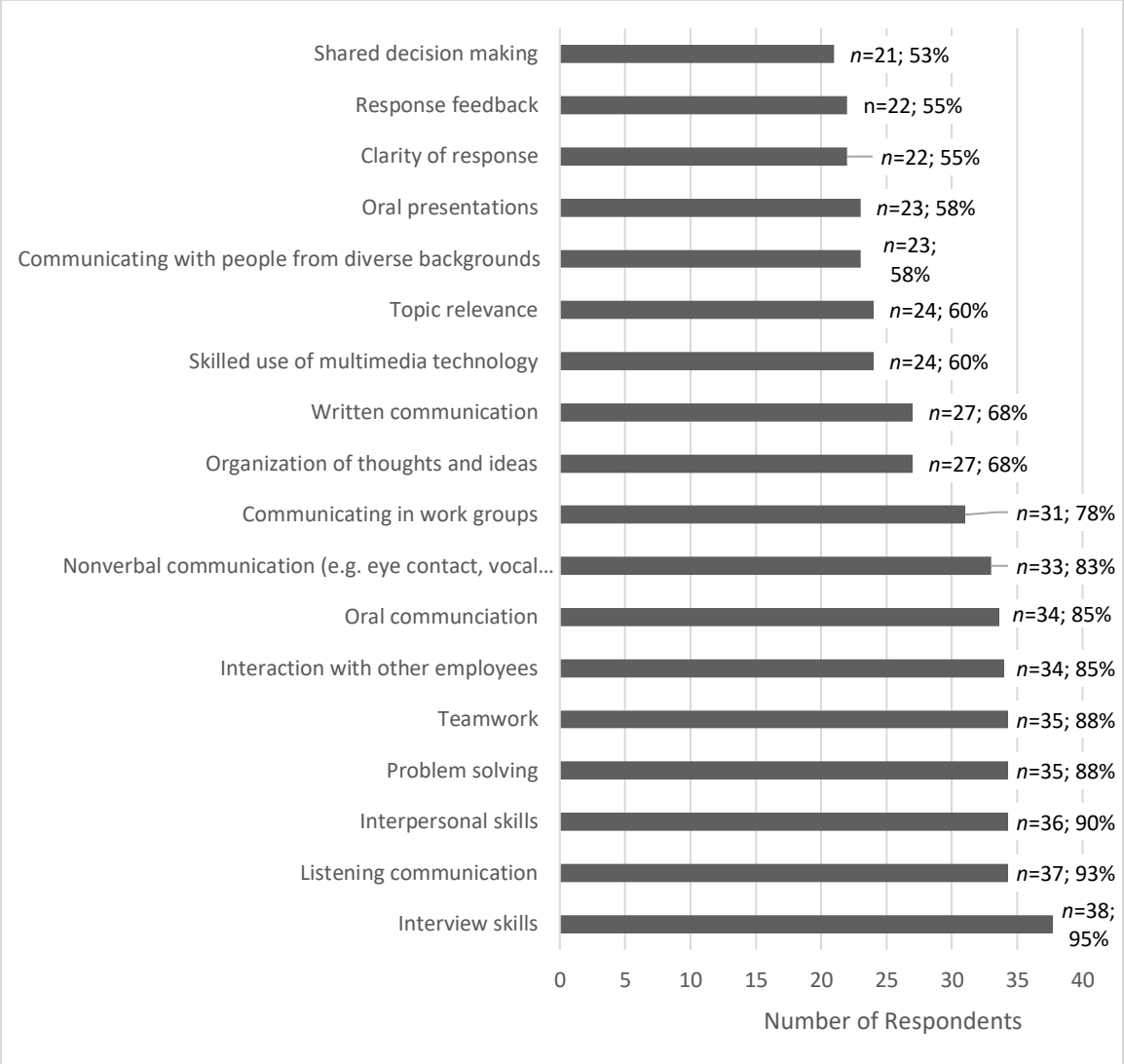

Figure 2. Communication and employment

Collaboration with Speech-Language Pathologists

Participants were then asked which officials collaborate with their program when selecting from the following: physical therapists, occupational therapists, social workers, speech-language pathologists. The participants could select more than one answer if they worked with more than one official. Speech-language pathologist was the official selected most commonly (36%; *n* = 13), followed by social worker (33%; *n* = 12), occupational therapist (22%; *n* = 8), and physical therapist (8%; *n* = 3).

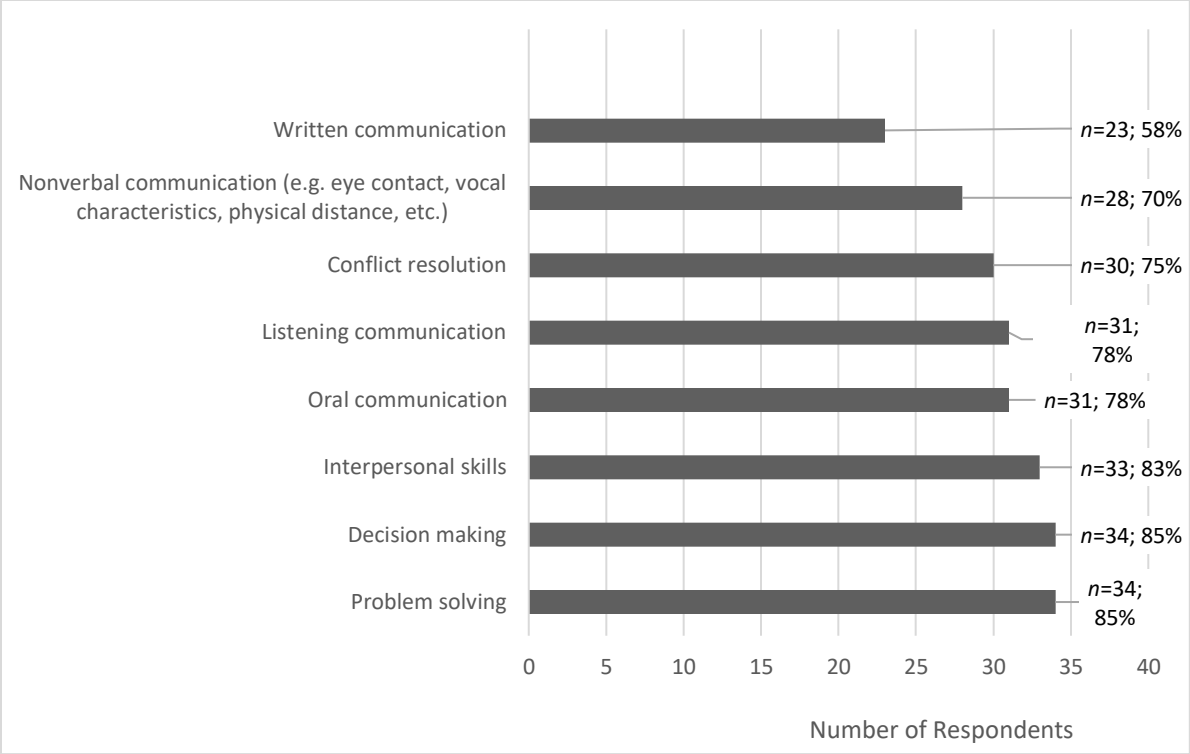

Figure 3. Communication and independent living

When asked if they have a Speech-Language Pathology program affiliated with their institution, 57% of participants (*n* = 23) reported they do not while 43% of participants (*n* = 17) reported that they do have a Speech-Language Pathology program affiliated with their institution. The participants who reported that they have a Speech-Language Pathology program affiliated with their institution answered what supports are being provided by the Speech-Language Pathology program. Approximately 1/3 of program directors reported that no supports are being provided (34%; *n* = 20). However, the majority of program participants reported collaboration with the SLP program (66%), and indicated support in the following ways: individualized intervention (24%; n = 14), small group intervention (16%; *n* = 9), collaboration with faculty (14%; *n* = 8) and a specialized course in communication/social skills (2%; *n* = 1).

Chapter 6

Discussion

Program Background

The findings of the current study were similar to the literature in that the majority of respondents indicated their programs were mixed-hybrid models at four-year institutions with the average length of the program for students with ID being two years (Hart, 2006; Neubert & Moon, 2006). When queried about their enrollment, the majority of program directors indicated having an enrollment goal of greater than 10 students, and the majority of program directors reported typically meeting this goal. However, of those program directors who reported not meeting their enrollment goal, the majority answered that recruitment was the primary reason. Regarding current enrollment, the majority of respondents reported having more than 10 students currently enrolled in their PSE program.

Program Missions and Aims

The findings of the current study are similar to the literature in that employment was most commonly ranked as the first priority, followed by socialization, followed closely by independent living (Griffin, McMillan, and Hodapp's, 2010; Scheef, 2016). Employment is most consistently reported to be a program aim as it is considered the "cultural rite of passage through which one enters into adulthood" (Grossi, Gilbride & Mank, 2014, p. 157). Further, the employment rate for individuals with a disability is only 18.7%, while the employment rate for individuals without a disability is 65.7%

(Bureau of Labor Statistics, 2018), which is significantly greater. This demonstrates a great need for individuals with ID to have adequate and specific training in job skills, which indicates why employment remains a top priority of many PSE programs for individuals with ID (Scheef, 2016; Grigal, Hart, & Weir, 2012; Papay & Bambara, 2011). In the view of the social model, society is keeping individuals with ID from being employed not because they do not have the ability to work, but instead because society has placed that perception and barrier on them. Because of this, it is essential for individuals with ID to learn desirable work skills and obtain work experience, so they have a higher probability of completing the program and having success in securing a job. However, it remains the responsibility of society to not place assumptions on individuals with ID when it comes to employment.

The opportunity to develop job skills and employment experience is essential for students so they are more suited for employment after completing the PSE program. However, this has the potential to create its own barrier for the program as it may prove difficult to find employment opportunities for students with ID on or around campus. While results of Grigal, Hart, and Weir's (2012) study found employment and independent living ranked almost equivalently to one another, findings across studies support that PSE programs for individuals with ID tend to highly value and prioritize employment, socialization, and independent living, although different programs assign a different weight of value to each because each program is individualized. Most programs report to highly value the socialization of their students and aim for their students to finish the program with increased probability of being employed and living independently.

Facilitators and Barriers to Program Implementation

As a PSE program is being initiated and further maintained, there are supports in place that assist in facilitating this growth as well as barriers that have the potential of interfering with the process. Facilitators and barriers have to be navigated so that supports are taken advantage of and barriers can be worked through, as awareness of both can serve to generate a successful program. The current study used the same facilitators and barriers found by Plotner and Marshall's (2015) study to determine the greatest supports to PSE programs as well as the greatest barriers (Hafner, Moffatt, & Kissa, 2011; Neubert et al., 2004; Neubert & Redd, 2008; Stodden & Whelley, 2004).

The current study had findings consistent with Plotner and Marshall (2015) in having at least adequate support from academic departments, the admissions office, administration, financial aid, and individual faculty. However, the majority of program directors in the current study reported that university housing was of limited support. This finding is not surprising considering that the majority of program directors reported that their program does not have housing options available. Because a primary program mission is for students to develop independent living skills, the lack of housing could prove to be a barrier to the students learning to live on their own or in situations with lesser levels of support. These skills are most effectively learned in a natural environment, which, in this case, is an environment where students are living independently. For independent living skills to be adequately attained and maintained, it is important that more programs begin to acquire housing options for their students. According to Thoma (2013), housing options are being looked into further by programs

so that students may be provided with the experience to functionally practice the skills they are learning.

Nearly all program directors indicated that facilitators strengthened over time, which is a finding also consistent with Plotner and Marshall's study (2015). These findings indicate that as the program becomes more established on campus, almost all facilitators of the program provide increased support as they learn more about the program and are able to see what the program is achieving. As housing has become an area of the PSE experience receiving increased attention in the literature, it is hoped that this area will also be strengthened over time as well. Although on campus housing is a common challenge seen across programs, as was indicated further in the current study with a majority of programs not offering on-campus or off-campus housing, this is seen as a necessary challenge to overcome due to it creating opportunity for students to practice their new independent living skills in their daily life as well as an increased opportunity for socialization because of living around traditional students (Plotner & Marshall, 2014). Individual faculty was found to be of substantial support, which is a positive indicator of success of the PSE programs as individual faculty members play a critical role in the development of this program (Stodden & Whelley, 2004).

Funding was a barrier that the majority of program directors reported having as is consistent with previous findings literature (Plotner & Marshall, 2015). In the current study, directors reported that program participant tuition, or private payment, was the primary funding source of their program. This was closely followed by external funding (i.e. grants and private contributions), indicating that at this time, both private payment as well as external funding are commonly the primary funding sources of PSE programs for

individuals with intellectual disabilities. This is consistent with Plotner and Marshall (2015), who found that funding for PSE programs for individuals with ID is primarily external in nature coming mostly from a combination of grants and private contributions that are made. This also aligns with the results of Grigal, Hart, and Weir's (2012) study, indicating that funds from local education agencies (LEAs), vocational rehabilitation agencies, and scholarships were significant in funding in addition to private payment, which was the funding option reported by the majority of participants. The student's program tuition being the primary funding source of PSE programs for individuals with ID creates a reliance on private funding that has the potential to hinder attendance of many who could potentially benefit from PSE. Mock and Love's (2012) study and Stodden and Whelley's (2004) study found students do not always have enough course hours to qualify for financial aid, further increasing the barrier of funding for those students who do not have the means to pay privately. This highlights the need for greater internal and external funding. It would follow that if the program was funded less from private payments and more from funds provided by grants, donations, and the institution, then this would increase opportunity for students with ID from low income families to attend a PSE program. In the current study, an average of 35% of students with ID in the reported program receive financial aid, further indicating this need. Grigal and colleagues (2012) did, however, find that federal financial aid is working to become more accessible to students with ID, demonstrating that this need is being recognized and PSE programs are attempting to become more reachable for all potential students.

In the current study, a large majority of program directors reported that liability issues were not considered barriers to their program. However, in Plotner and Marshall's

(2015) study, it was found that liability issues were considered barriers to the program, especially when considering housing. This discrepancy could be for reasons such as institutions having developed more effective and efficient ways to handle liability challenges and concerns, or because liability was indicated to be tied to housing concerns. Plotner and Marshall's (2015) study and program directors in the current study may not have considered housing in congruence with liability. Given the knowledge that the majority of program directors in the current study indicated having no housing options for students, they may not have barriers with liability because they do not offer housing.

The majority of respondents reported that barriers to the program had improved as the program had matured, which is consistent with the literature that the barriers and challenges program directors face at the beginning of the program are found to have less of an influence as the program continues (Plotner & Marshall, 2015). This would indicate that as the program becomes more established at its respective institution, barriers that were once in place become more minimal as the purpose and success of the program is seen. This is a positive indicator that the longer a program is in place, the fewer challenges it will face. While approximately one-third of program directors indicated that their barriers had not improved, it should be noted that the majority of participants indicated they were in their first five years in their position. If they had just completed their first year, for example, it may not be possible to see if change had occurred over time.

Characteristics of Student Success

In the current study, the two greatest indicators of success answered by the program directors were communication skills and self-determination, with the third being time-management.

Self Determination

Self-determination is a characteristic that almost all program directors indicated makes an individual more likely to be successful, further strengthening the argument that self-determination is of upmost importance in individuals with intellectual disabilities. Self-determination is complex in that it involves "self-awareness (including self-assessment); self-advocacy (recognizing and acting upon one's rights); self-efficacy (belief that the person can perform an identified task); decision making; and independence (initiating tasks and adjusting goals)" (Dowrick, Getzel, & Briel, 2004, p. 33). Self-determination indicates the predicted future success of an individual with ID, such as the ability to achieve the skills necessary to live independently (Benitez, Lattimore, & Wehmeyer, 2005; Wehmeyer & Palmer, 2003). This is consistent with literature discussing the magnitude of self-determination when considering success of individuals with intellectual disabilities in attending and completing a PSE program and being successful within it (Grigal et al., 2011; Nota & Soresi, 2004; Soresi, 2004; Test et al., 2013; Getzel, 2008). The student may have the opportunities to participate and learn skills necessary for success in life; however, if the student does not have the internal drive and motivation to pursue acquiring these skills, and the knowledge that they can take control of their own life and make their own decisions, then it will be difficult for that individual to succeed. As self-determination has been indicated as essential for

individuals with ID to succeed, it follows that this concept is one which should be prioritized in PSE programs.

Communication

Results of the current investigation indicate that communication ability and self-determination are the top indicators of student success. The relationship between these two variables is therefore interesting to note. It has been found that individuals with ID who have challenges with communication also have challenges with self-determination (Towles-Reeves, Kearns, Kleinert, & Kleinert, 2009; Carter et al., 2009). It follows that as communication skills begin to improve and further develop, self-determination will do the same. SLPs are considered ideal partners in working to achieve the goals associated with communication and self-determination (Powell, 2018). SLPs can play an integral role in the process of transitioning to the PSE program with these skills as well as fostering them in the setting of the PSE program if given the opportunity to do so (Collins & Wolter, 2018).

Time Management

Time management is a skill that has been previously discussed as being important in the success of an individual with an ID, as it is considered a self-management skill (Mull, Sitlington, & Alper, 2001). In discussing the need for communication intervention for all individuals, it was found that communication skills and interpersonal skills are the most desired characteristics employers look for in employees and are attributed to their success (Cline, 2005; Foxworth, 2001; Tucker & McCarthy, 2001; Weir, 2006).

Outcomes of PSE Programs

Data collected from program directors is consistent with past studies reporting that an individual with an ID has an increased probability of being employed (Grigal & Hart, 2010; Smith et al., 2013; Ross et al., 2013) and of making a higher salary, or greater than minimum wage (Baum & Ma, 2007; Bureau of Labor Statistics, 2010; Grigal et al., 2011; Mischel, Bernstein, & Allegretto, 2007) after completion of a PSE program. This indicates that the most common primary mission of the PSE programs, employment, is having success as students are more likely to be employed following the completion of the program. Therefore, specifically training job skills and providing employment experience makes a student a more competitive job candidate.

When compiling the data from the respondents, the mean reported percentage indicated the majority of students were employed within a year of completing the PSE program, with slightly over half of those who indicated being employed being reported to make more than minimum wage and slightly less than half of those reported to be employed working full time. However, Grigal and collaborators (2014) found in their survey of PSE outcomes that of the students with ID that worked, 77% were making above minimum wage, which is significantly more than in the current study (M=52%). This could be due to the large standard deviation (SD=34) and variability among programs surveyed. Nonetheless, it remains that students with ID that have completed PSE are more likely to make more than minimum wage (Baum & Ma, 2007; Bureau of Labor Statistics, 2010; Grigal et al., 2011; Mischel, Bernstein, & Allegretto, 2007).

Only slightly more than a quarter are reported to live independently one year following completion of the PSE program; however, it should be noted there is a large

standard deviation, indicating large variation of completion employment rates among programs. When Grigal and colleagues (2012) surveyed PSE programs for students with ID for outcomes, they also indicated great variability in responses reported. The great variability reported consistently across the survey indicates there is a great amount of discrepancy between these programs, which could depend on factors such as their location, their length of existence, the number of students they have, the model of PSE they are providing, or their primary mission as a program.

Communication and Social Skills in the PSE Curriculum

Communication was found to be an essential aspect of each of the three missions of PSE programs being prioritized: independent living, employment, and socialization. Because of the necessity of communication in each of these missions, PSE programs work to address communication as it pertains to each mission.

Communication

Improved communication is positively associated with an increased likelihood of employment and living independently (Carter, Austin, & Trainer, 2012; Keyton, 2011; Morreale and Pearson, 2008). As such, it is logical that both communication and socialization be addressed in PSE programs for individuals with ID when working toward these aims. It has been found that when there is growth in social communication skills and ability, this leads to the individual having greater potential for increased self-determination and also greater social inclusion (Nota & Soresi, 2004; Soresi, 2004).

Program directors of the current study indicated the importance of targeting communication skills specifically focusing on employment and specifically focusing on independent living skills. This reveals the necessity of targeting language in a variety of

settings to see the overall benefit of increased communicative skills. Literature highlights the fact of adaptive behavior typically being a challenge for individuals with ID, further validating the teaching of appropriate communicative skills for specific environments due to this proving difficult for many individuals with ID (de la Vega et al, 2013; Goldberg et al., 2009; Matson & Nebel-Schwalm, 2007; Paul & Norbury, 2012).

Independent Living. Over three quarters of program directors reported that when addressing areas of independent living, they target decision making, problem solving, interpersonal skills, listening communication, and oral communication. With regard to independent living, the most frequently reported skills targeted included decision making, problem solving, and interpersonal skills. The least commonly reported communication skill targeted with regard to independent living was writing; however, it should be noted that over half did report that this skill was targeted. This indicates that communication is often targeted when addressing independent living, and that program directors are aware of the ways in which communication infiltrates into independent living.

Employment. Communication skills are largely targeted when addressing employment as the large majority indicated they target teamwork, problem solving, oral communication, nonverbal communication (e.g. eye contact, vocal characteristics, physical distance, etc.), interpersonal skills, interaction with other employees, and communicating in work groups when addressing employment. Over 90% of program directors answered that when addressing employment, they target listening communication and interview skills. It is evident through this study that program directors are aware of the importance of communication with regard to both employment and independent living, showing the consistency with literature which indicates that when

individuals have increased communication skills and social skills, they are more likely to have a positive employment outcome (Carter, Austin, & Trainer, 2012). Keyton (2011) reported that almost all jobs are reliant on the communication between coworkers and employers/employees. Morreale and Pearson (2008) found communication intervention is most needed because it is considered necessary for a successful career, and that deficits in communication skills can often lead to termination of employment (Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986).

Social Skills

When program directors were queried regarding the likelihood of students to improve specific social behaviors, the majority of respondents reported students were at minimum "likely" to improve in all social behaviors listed, with the exception of "understanding/making jokes" and "understanding of abstract language." Overall, this is evidence that the majority of program directors typically witness notable growth in the social behaviors of their students, which is directly tied to social communication. As the majority of the programs in this study were reported to be mixed-hybrid programs with both segregated classes targeting subjects such as independent living and job skills as well as inclusive class with traditional student peers, it is not surprising that these social behaviors were found to improve throughout the duration of the program. As socialization is often a priority of students with ID and their parents/caregivers when entering the program, it is encouraging to see the growth that is nurtured in these students throughout the program.

The two social behaviors the majority of program directors reported students to be "very likely" to improve were "appropriate greetings" and "developing peer relationships

(age-appropriate).” The social behavior of developing age-appropriate peer relationships being reported as “very likely” to improve aligns closely with reports of individuals having increased friendships and self-esteem when participating in a PSE (National Center for Education Statistics, 2006). It follows that having appropriate greetings with others would allow for peer relationships to have an increased probability of developing, demonstrating the complexity of these behaviors. When targeting pragmatics or social communication, it is in an SLP’s realm of practice to address how to appropriately address other individuals.

In addition to looking at the influence on social communication or socialization, it is important to look at how these behaviors affect an individual in other priorities of the program: employment and independent living. As mentioned, a student is “very likely” to improve in appropriate greetings. It is important to appropriately greet people at a place of work, whether it is a boss, coworker, or clientele. An inappropriate greeting could lead to an individual being considered rude or inappropriate. When considering independent living, appropriate greetings are necessary with seeing individuals such as peer roommates and the landlord. The individual must rent/buy from someone and they may want roommates, and good impressions have to be made and relationships have to be built. An appropriate greeting is essential for this. By the same token, developing peer relationships is important in employment when considering team development. Petronski and Gleeson (1997) found in their study that of the 73% of participants who reported to have friends at work, 97% of those reported not seeing those friends outside of place of employment. This further supports the need for supports to foster those relationships. The current study backs this statement by more than three-fourths of program directors

reporting that the following were communication areas targeting employment: "interaction with other employees," "interpersonal skills," and "teamwork." They also reported that greater than three-fourths of respondents indicated that "interpersonal skills" were additionally targeted for independent living as well. This exhibits the relationships between employment, socialization, and independent living, and how social communication plays a role in all three top priorities.

Communication Intervention

The positive outcomes associated with communication intervention for individuals with ID are well documented (Reichle, 1997; Snell, Chen, & Hoover, 2006;Snell et al., 2010; Wilkinson, 2011). For individuals, specifically adults, with ID, communication intervention could involve targeting the individual's speech and language development, targeting communication skills, or targeting communication interactions between individuals with ID and those they encounter (van der Meer et al., 2017). Speech-language pathologists (SLPs) are the professionals that work with individuals experiencing communication disorders, which as previously mentioned, the majority of individuals with ID experience (Pinborough-Zimmerman et al., 2007). As speech-language pathologists are trained in the assessment and intervention of communication disorders, of which the majority of students with ID have, it is logical that they would be an optimal partner to collaborate in the provision of these services. Results of the current survey reflect an understanding of this importance.

Collaboration with Speech-Language Pathologists

SLPs are described as being "language specialists, and language is a part of almost every cognitive and communication act taken by a person" (Ukrainetz &

Fresquez, 2003, p.285). SLPs have recently began realizing the participation restrictions existing for individuals with communication disorders, which the majority of individuals with ID have. This indicates that SLPs are aware of the effect a lack of communication has on an individual in their daily life and see the importance of intervening.

In the current study, when program directors were queried as to which professional programs collaborated, SLP was the most commonly selected helping profession when compared to physical therapy, occupational therapy, and social work. This indicates that program directors are aware of the importance collaborating with SLPs with regards to communication, as it plays a role in all three primary priorities of the programs reported: employment, socialization, and independent living. However, the majority of program directors reported not collaborating with SLPs in addition to not having an SLP program affiliated with their institution. It is positive to note that of the program directors that reported their institution having an affiliation with their SLP program, almost two-thirds reported that supports were provided by the SLP program. However, there remains a majority of PSE programs for students with ID who are not currently collaborating with an SLP. This is a missed opportunity for the PSE program as well as the SLP.

While individualized intervention was the most common intervention type selected by program directors reporting collaboration with an SLP program affiliated with their institution, group intervention would seem to have the greatest impact on students. This is because in a group intervention setting, social and communication skills can be targeted in a variety of interactions. There is a need to further research whether group or individual therapy is of maximal efficacy for PSE students with ID. While there

is a large base of literature citing the benefits of group and peer-mediated intervention in a naturalistic setting for individuals with autism spectrum disorder (Paul, 2008; Krantz & McClannahan, 1998; Bellini et al., 2007), research is needed on these service delivery models specific to adolescents and adults with ID and their efficacy.

When program directors were asked to indicate the areas in which additional assistance would be beneficial to students, over half of the program directors indicated: transitions throughout the day, speaking (oral communication), social skills, problem solving, planning, mental health, independent living, dealing with the unexpected, conversational skills. Given the nature of these skills, a group setting or a class is likely to prove as most beneficial to the students, as students would be able to practice with one another. Students with ID are more likely to benefit from instruction if conversational partners and settings are provided to practice typical interactions (Calculator, 1988). Also, if the intervention was provided with a class, there is the potential for students with ID as well as traditional students to be involved. This would make traditional students available to be peer models of desired skills.

Although mental health does not fall under the communication umbrella, employment has been shown to have a positive impact on mental health, and communication is essential to gaining and maintaining employment (Lent and Brown, 2013). With the exception of mental health, each of the other areas of additional assistance reported by the majority of program directors are skills that are addressed by SLPs. This indicates that additional assistance from SLPs could be of substantial benefit to students. If collaboration is facilitated at institutions between SLP programs and PSE programs for individuals with ID, there is an increased probability of targeting areas

needing additional assistance that directly impact employment, socialization, and independent living.

Students will potentially have better post PSE employment outcomes if the student has an awareness of their disability, understands what their rights and needs are, and can advocate for themselves, which are self-determination skills that can be effectively targeted by an SLP (Collins & Wolter, 2018). Storey, Ezell and Lengyel (1995) argue that communication support is essential for individuals with ID in the workplace, and that SLPs have a significant role to play on a supported employment team.

The Department of Communication Disorders at Southern Connecticut State University (SCSU) developed and implemented a peer mentor program at their university. They partnered with Chapel Haven Asperger Syndrome Adult Transition Program (ASAT) with targets of social communication and cognition. This program model consisted of a class, with an equal number of 12 traditional students, 12 undergraduates in CMDS, and 12 students with ASD. The class met twice a week for three weeks and was led by graduate students in CMDS. Therefore, this model depicts using an inclusive university course that targets the communication of students with disabilities using the traditional student as peer models. By the completion of this program, students have reported to have a better understanding of the university and concepts/tasks that accompany it, as well as better knowledge of social communication. Traditional students and nontraditional students also reported naturally fostering friendships as a result of the program. Although this model was specifically for students with ASD, there are typically similar social communication challenges for individuals

with ID and individuals can be diagnosed with both ID and ASD. Therefore, it is expected that this model would have similar results with the PSE programs surveyed. SCSU Department of Communication Disorders exhibited how PSE programs for students with disabilities and SLPs can collaborate, in this case, in small group intervention, to further social communication skills of students with disabilities (Cook, Weiss, & Hodge, 2017).

For those PSE programs that do not have SLP programs affiliated with their institution, there is the possibility of SLPs administering staff training programs in order to maintain appropriate communication interventions for students with ID (van der Meer, 2017). The role of the SLP has expanded beyond providing instruction in a treatment room or clinic, valuing the importance of providing intervention in a naturalistic environment, even if that means consulting with and training those who the student with ID interacts with in their daily life (e.g. teachers, peer mentors, job coaches, etc.; Hart & Rogers-Warren, 1978; Warren & Kaiser, 1986). Storey, Ezell, and Lengyel (1995) further emphasized the necessity of including individuals in the student's daily life in communication training to see successful outcomes, as training for communication partners has been proven to enhance communication intervention outcomes (Kent-Walsh, Murza, Malani, & Binger, 2015). Further research indicating the effectiveness of direct-care training for communication intervention by SLPs would need to be conducted.

Limitations and Future Directions

With regard to limitations of the current study, the small sample size is important to note, with only 40 program directors completing the entire survey instrument. There are currently 284 PSE programs that serve individuals with ID, resulting in a 14%

completion rate for the survey. Therefore, the information found in this study, although representative for the majority of program directors who completed the survey, would potentially not represent all PSE programs for individuals with ID. Additionally, the majority of program directors were representing institutions in the Southeast, so information may not be able to generalize to schools in different regions across the nation. Further, the majority of program directors were found to be in their current leadership position for 1-5 years while the majority of reported programs have been in existence for 6-10 years. Therefore, current program directors may have not had the opportunity to see certain growth and challenges that past directors have seen.

It should be noted that two program directors reported having two different tracks of the program, one that was two years and one that was four years. Further data could be drawn in future studies to determine first the requirements of a two-year track versus a four-year track and whether communication was considered in this decision. Further, it would be of evidence to document outcome differences when considering a student who completed the two-year track versus a student who completed the four-year track. It would also be interesting to determine if most established PSE programs experience fewer barriers and continue to grow in support.

To learn more about the communication aspect, it would be interesting to do case studies, following individuals with ID from the beginning of their time in PSE to the time of program completion, specifically focusing on the growth of communication skills and what that looked like in each individual. This would provide further ideas of areas for support of communication development in how it effects employment, socialization, and independent living.

Future research could also focus on the different types of SLP collaboration that are currently taking place at PSE programs to determine effectiveness as well as discover different models that could be implemented at other institutions so they can also have SLPs get involved.

Conclusions and Clinical Implications

Communication skills have an impact in the everyday life of all individuals, and students with ID are likely to have challenges with these skills. These challenges have great potential to negatively impact their quality of life. The results of this study indicate that PSE program directors recognize the importance of communication and social skills in the success of individuals with ID. Communication and social skills are imperative in their program missions: employment, socialization, and independent living. Program directors also recognize the need for assistance in developing these communication skills. The link between the knowledge of the importance of communication skills for success and the need for additional assistance in obtaining communication skills is the SLP providing communication intervention. Program directors have also indicated knowledge that collaboration with SLPs is beneficial in developing communication of students with ID. Communication intervention will serve to benefit program priorities, as well as the overall quality of life of the students in the program.

The "communication imperative," which was declared by the USA Commissioner for the Administration on Developmental Disabilities "Every person, regardless of the severity of his/her disabilities, has the right and the ability to communicate with others, express every day preferences and exercise at least some control over his or her daily life. Each individual, therefore, should be given the chance, training, technology, respect and

encouragement to do so" (Crossley, 1999, p. 11). Communication is a vital component of daily life, and therefore communication intervention is important for students with ID who exhibit challenges in this area. For students with ID to be successful in the missions reported by their respective programs, sufficient communicative skills are essential. Therefore, communication skills are essential to the success of these students during their time in the program, as well as their success in living an independent day to day life to their greatest potential. It is known that times of transition are typically especially challenging for individuals with ID (Salvadir-Carulla et al, 2011), so communication intervention would be crucial at this time to make their transition one of growth.

Research shows that educators and other school professionals do not have a clear understanding of the role of the SLP and the skills and knowledge they have regarding communication as a whole (Ukrainetz & Fresquez, 2003). This could indicate that although program directors in the current study demonstrate knowledge of the importance of communication intervention in the student with ID, they do not know the potential benefits that a skilled SLP could provide these students. Therefore, it is necessary to educate program directors of the skills and training of SLPs and of the potential benefits of collaborating with them, describing the role the SLP can fill in their curriculum and how they can contribute to the success of their students. It is also important to encourage SLPs to initiate conversations with program directors at institutions around them discussing partnership. SLPs have a role to take the lead in educating others on the expertise they can bring to the table with communication as a whole (Storey, Ezell, & Lengyel). SLPs have an important role to fill in guiding communication intervention for students with ID in PSE programs, and though it is a role SLPs may have to advocate for

and initiate themselves, they have the training to bring the most benefit to the overall communication skills of these students.

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Appendix 1. Recruitment Email

Hello! My name is Ashley Moates, and I am a graduate student in speech-language pathology at Auburn University working on a research project titled "The Role of Communication and Social Skills in Postsecondary Education Programs for Students with Intellectual Disabilities" with my professor, Dr. Allison M. Plumb. Our project is an electronic survey to determine the role of communication and social skills in postsecondary education programs for students with intellectual disabilities. This study will help speech-language pathologists have a better understanding of the role communication and social skills play in postsecondary education programs for individuals with disabilities and how these components are addressed within the current programs of study along with the current educational missions of the programs and their priorities. The information obtained can make new knowledge available to speech-language pathologists and current/future directors of postsecondary education programs for students with intellectual disabilities to better these programs and bring potential for collaboration between the two.

The survey will take approximately less than 15 minutes to complete. Participation in this research study is voluntary and all responses are completely anonymous. There are no direct benefits, no costs, and no compensation for completing this survey.

If you have any questions regarding this survey, please email Ashley Moates at aem0040@auburn.edu or Dr. Allison Plumb at amp0016@auburn.edu

If you are a director (or its equivalent) of a postsecondary education program for individuals with disabilities and have been in this position for at least one year and would like to participate, indicate that you choose to do so by clicking on the link below to begin the survey:

https://auburn.qualtrics.com/jfe/form/SV_eL2E3EZarFjTwtn

Thank you for your time and support!

Appendix 2. Recruitment Email Reminder

Hello! My name is Ashley Moates and I am a graduate student at Auburn University working on my master's thesis project, which a survey studying the role of communication and social skills in postsecondary education programs for students with intellectual disabilities. If you have already taken this survey, I would like to thank you for your time. If you have not, I would like to ask that you consider taking this survey. My younger sister, Anna, has Down syndrome and is currently enrolled in a postsecondary education program for students with intellectual disabilities. She is currently in her second year, and my family and I have seen such amazing growth not only in her academic skills, but have also seen significant growth in her social skills as she has continued to make friends throughout her college experience thus far. I cannot describe to you how seeing this growth has impacted me and created a drive in me to learn more. I decided to research this topic because I would love to have a better understanding of the role communication and social skills play in postsecondary education programs for individuals with disabilities and how they can contribute to the success of a student. I am also interested in seeing how these components are addressed within the current programs of study along with the current educational missions of the programs and their priorities. My hope is that in the future, new knowledge can be made available to speech-language pathologists and current/future directors of postsecondary education programs for students with intellectual disabilities to better these programs and

bring potential for collaboration between the two, as I have personally seen potential in this idea.

The Auburn University IRB approved survey will take approximately 10 minutes to complete. Participation in the survey is voluntary and all responses are completely anonymous. An information letter with details on this project and your potential participation is attached to this email.

If you have any questions regarding this survey, please email Ashley Moates at aem0040@auburn.edu or Dr. Allison Plumb at amp0016@auburn.edu

If you are a director (or its equivalent) of a postsecondary education program for individuals with disabilities and have been in this position for at least one year and would like to participate, indicate that you choose to do so by clicking on the link below or in the attached information letter to begin the survey:

https://auburn.qualtrics.com/jfe/form/SV_eL2E3EZarFjTwtn

Thank you for your time and support! I am looking forward to discovering more through your input.

Appendix 3. Survey

PSE_Intellectual Disabilities

The following definitions were used in the development of this survey:

Intellectual Disability (ID): characterized by a childhood onset in which an individual has significant limitations in intellectual functioning, in areas such as problem solving, reasoning, and learning, as well as in adaptive behaviors, such as social skills used in day to day life (AAIDD, 2013).

Postsecondary Education (PSE) Program for Individuals with ID: give students with ID an opportunity to attend a collegiate program so they can continue their education as well as interact with students without disabilities, or traditional students (Consortium for PSE for Individuals with Disabilities, 2009)

Please proceed. We appreciate your time in completing this survey.

Start of Block: Participant Background

Q1
Are you currently a director (or in an equivalent leadership position) of a postsecondary education (PSE) program for individuals with disabilities?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Are you currently a director (or in an equivalent leadership position) of a postsecondary educa... = No

Q2 How long have you been in a leadership position of the PSE program with which you are affiliated?

- ○ Less than 1 year (1)
- ○ 1-5 years (2)
- ○ 6-10 years (3)
- ○ Greater than 10 years (4)

Skip To: End of Survey If How long have you been in a leadership position of the PSE program with which you are affiliated? = Less than 1 year

Q3 Does your program serve individuals with intellectual disabilities (ID)?

- ○ Yes (1)
- ○ No (2)

Skip To: End of Survey If Does your program serve individuals with intellectual disabilities (ID)? = No

Q4 In which state does your program reside?

▼ Alabama (1) ... I am not professionally licensed in any state (58)

Q5 How long has your program been in existence?

- ○ less than 3 years (1)
- ○ 3-5 years (2)
- ○ 6-10 years (3)
- ○ greater than 10 years (4)

Q6 Which description best describes your institution?

- 4-year college/university (1)
- Community/junior college (2)
- Career school, technical school, or vocational/trade school (3)

Q7 With regard to inclusivity, please select the term that best describes your program.

- Segregated (1)
- Mixed/Hybrid (2)
- Totally inclusive (3)

Q8 What university housing options are available to your students?

- On-campus university housing (1)
- Off-campus university housing (2)
- Both on-campus and off-campus university housing (3)
- No housing options available (4)

Q9 What is your typical annual enrollment goal?

- 1-5 students (1)
- 6-10 students (2)
- 11 to 20 students (3)
- 20 or more students (4)

Q10 Do you typically meet your typical enrollment goals?

- ○ Yes (1)
- ○ No (2)

Skip To: Q12 If Do you typically meet your typical enrollment goals? = Yes

Q11 What is the primary reason you do not meet your typical enrollment goal?

- ○ Faculty Participation (1)
- ○ Funding (4)
- ○ Recruitment (5)
- ○ If other, please explain: (3)

_____

Q12 How many students are currently enrolled in your program?

- ○ 1 to 5 students (1)
- ○ 6 to 10 students (2)
- ○ 11 to 20 students (3)
- ○ 21-30 students (4)
- ○ Greater than 30 students (5)

Q13 From start to completion, what is the typical length of your program?

- ○ 1 year (1)
- ○ 2 years (2)
- ○ 3 years (3)
- ○ 4 years (4)
- ○ More than 4 years (5)
- ○ If other, please explain: (6)

_____

End of Block: Participant Background

Start of Block: Program Aims and Priorities

Q14 Rank the following: from the goal considered most important to your program (1) to the goal considered of least importance (3):

_____ Employment (1)
_____ Independent Living (2)
_____ Socialization (3)

End of Block: Program Aims and Priorities

Start of Block: Facilitators and Barriers

Q15 Please indicate whether you consider the following as barriers to the implementation of your PSE program?

	Barrier (1)	Not a Barrier (2)
Compromising rigor of institution (1)	○	○
Employment (2)	○	○
Faculty (3)	○	○
Funding (4)	○	○
Liability (5)	○	○
Student safety (6)	○	○

Q16 Of those you selected, which do you consider to be the greatest barrier to your program?

- ○ Compromising rigor of institution (4)
- ○ Employment (5)
- ○ Faculty (6)
- ○ Funding (7)
- ○ Liability (8)
- ○ Student safety (9)
- ○ If greatest barrier was not included, please add here: (10)

_____

Q17 Have the selected barriers improved as the program has matured?

- ○ Yes (1)
- ○ No (2)

Q18 Please rate the support you receive from the following sources.

	Limited Support (1)	Adequate Support (2)	Substantial Support (3)
Academic departments (1)	○	○	○
Admissions office (2)	○	○	○
Administration (3)	○	○	○
Financial aid (4)	○	○	○
Individual faculty (5)	○	○	○
University housing (6)	○	○	○

Q19 Of those you selected, which do you consider to be the greatest facilitator to your program?

- ○ Academic departments (4)
- ○ Admissions office (5)
- ○ Administration (6)
- ○ Financial aid services (7)
- ○ Individual faculty (8)
- ○ University housing (9)
- ○ If greatest facilitator was not included, please add here: (10)

_____

Q20 Have the selected facilitators strengthened over time or weakened over time?

- ○ Strengthened (1)
- ○ Weakened (2)

End of Block: Facilitators and Barriers

Start of Block: Outcomes

Q21 Approximately what percentage of students are employed within one year of completion of your program?

	0 10 20 30 40 50 60 70 80 90 100
Employed following program completion ()	

Display This Question:

If Approximately what percentage of students are employed within one year of completion of your prog... [Employed following program completion] > 1

Q22 Please indicate the percentage of students who have completed your program have full-time employment and/or earn greater than the federal minimum wage requirement.

	0 10 20 30 40 50 60 70 80 90 100
Have full time employment ()	
Earn greater than minimum wage ()	

Q23 What areas of communication are targeted when addressing employment? Select all that apply.

- [ ] Clarity of response (15)
- [ ] Communicating in work groups (6)
- [ ] Communicating with people from diverse backgrounds (7)
- [ ] Interaction with other employees (9)
- [ ] Interpersonal skills (5)
- [ ] Interview skills (12)
- [ ] Listening communication (3)
- [ ] Nonverbal communication (e.g. eye contact, vocal characteristics, physical distance, etc.) (4)
- [ ] Oral communication (1)
- [ ] Oral presentations (10)
- [ ] Organization of thoughts and ideas (18)
- [ ] Problem solving (8)
- [ ] Response feedback (16)
- [ ] Shared decision making (13)
- [ ] Skilled use of multimedia technology (11)
- [ ] Teamwork (17)

- [ ] Topic relevance (14)
- [ ] Written communication (2)

Q24 Is independent living a goal targeted in your program?

- ○ Yes (1)
- ○ No (2)

Q25 What areas of communication are targeted when addressing areas of independent living? Select all that apply.

- [ ] Oral communication (1)
- [ ] Written communication (2)
- [ ] Listening communication (3)
- [ ] Nonverbal communication (e.g. eye contact, vocal characteristics, physical distance, etc.) (4)
- [ ] Interpersonal skills (5)
- [ ] Problem solving (6)
- [ ] Decision making (7)
- [ ] Conflict resolution (8)

Q26 Approximately what percentage of students are living independently within one year of completion of your program?

	0 10 20 30 40 50 60 70 80 90 100
Live Independently ()	

Q27 How do you define the individual as "living independently"? (select all that apply)

- ☐ Independently in his/her own home/apartment with no staff supports (1)
- ☐ In the home/apartment with visiting support daily (2)
- ☐ In the home/apartment with visiting support weekly (3)
- ☐ Supported living in a home/apartment with 3 or fewer persons (4)
- ☐ Group home with support and four to eight individuals living together (5)
- ☐ Residential facility with 9 or more people (6)

Q28 How likely is it that a student completing your program will improve in the following social behaviors?

	Very unlikely (1)	Unlikely (2)	Unsure (3)	Likely (4)	Very likely (5)
Adapting to changes in routine (3)	○	○	○	○	○
Appropriate greetings (2)	○	○	○	○	○
Broadening of interests (foods, games, etc) (9)	○	○	○	○	○
Developing peer relationships (age-appropriate) (7)	○	○	○	○	○
Entering/exiting conversation (5)	○	○	○	○	○
Exhibiting turn-taking (enjoyable activities, etc) (12)	○	○	○	○	○
Eye contact (1)	○	○	○	○	○
Filtering/monitoring language (11)	○	○	○	○	○
Following directions (10)	○	○	○	○	○
Sharing interests of others (6)	○	○	○	○	○
Understanding/making jokes (4)	○	○	○	○	○
Understanding of abstract language (8)	○	○	○	○	○

Q29 Please select which characteristics of a student will make them more likely, less likely, or not affect their probability of success at the completion of the program?

	Indicators of Success		
	More likely (1)	Less likely (2)	No effect (3)
Communication skills (1)	○	○	○
Organizational skills (2)	○	○	○
Previous job experience (3)	○	○	○
Self-determination (4)	○	○	○
Study skills (5)	○	○	○
Technological knowledge (6)	○	○	○
Time-management skills (7)	○	○	○

End of Block: Outcomes

Start of Block: Financial

Q30 What is currently the primary funding source of your program?

- ○ External funding - grants (1)
- ○ External funding - private contributions (2)
- ○ Program Participant Tuition (3)
- ○ University funds (4)

Q31 What percentage of your students receive financial aid to attend your PSE program?

0 10 20 30 40 50 60 70 80 90 100

Receive financial aid ()	

Q32 Is your program a Comprehensive Transition Program (CTP)?

- Yes (1)
- No (2)

Q33 What are the sources of financial aid they receive? Select all that apply

- Federal Pell Grant (1)
- Federal Supplemental Educational Opportunity Grant (2)
- Federal Work-Study Program (3)
- Federal Student Loans (4)
- Private Student Loans (5)
- Grants (6)
- Scholarships (7)
- Medicaid waiver (9)
- Vocational rehabilitation (10)
- Other (8) _____

End of Block: Financial

Start of Block: Communication

Q34 Do you have a Speech-Language Pathology program affiliated with your institution?

- ○ Yes (1)
- ○ No (2)

Q35 Which of the following officials collaborate with your program?

- ○ Physical Therapists (1)
- ○ Occupational Therapists (2)
- ○ Social Workers (5)
- ○ Speech-Language Pathologists (3)

Skip To: Q36 If Which of the following officials collaborate with your program? = Speech-Language Pathologists

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Q36 What supports are being provided by the Speech-Language Pathology program at your institution? Select all that apply.

- ☐ Collaboration with faculty (1)
- ☐ Individualized intervention (2)
- ☐ Small group intervention (3)
- ☐ Specialized course in communication/social skills (4)
- ☐ None (5)
- ☐ Other (6) _____

Q37 Please indicate the areas you believe additional assistance could benefit your students. Select all that apply.

- [ ] Ability to physically perform a skill (1)
- [ ] Assistive technology (2)
- [ ] Behavior (3)
- [ ] Conversational skills (4)
- [ ] Coordination/balance (5)
- [ ] Dealing with the unexpected (6)
- [ ] Fine motor skills (7)
- [ ] Gross motor skills (8)
- [ ] Independent living (9)
- [ ] Listening (10)
- [ ] Mental health (11)
- [ ] Memory (12)
- [ ] Planning (13)
- [ ] Problem solving (14)
- [ ] Reading (15)
- [ ] Social skills (16)

- [ ] Speaking (17)
- [ ] Transitions (18)
- [ ] Writing (19)

End of Block: Communication

Appendix 4. Information Letter

Auburn University

Department of Communication Disorders

The Auburn University Institutional Review Board has approved this document for use from October 21, 2019 to ------- Protocol #19-469 EX 1910

INFORMATION LETTER

for a Research Study entitled

"The Role of Communication and Social Skills in Postsecondary Education Programs for Students with Intellectual Disabilities"

You are invited to participate in a research study to determine the role of communication and social skills in postsecondary education programs for students with intellectual disabilities. The study is being conducted by Ashley Moates, who is a graduate student pursing her Masters' degree in Speech-Language Pathology under the direction of Dr. Allison M. Plumb, Associate Professor in the Auburn University Department of Communication Disorders. You were selected as a possible participant because you are a director (or its equivalent) of a post-secondary education program for individuals with intellectual disabilities and have been in this position for at least a year.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete an electronic survey of 37 questions. The survey will be administered with the on-line survey tool Qualtrics, a secure internet-based software program. Each question in the survey will be optional and the participant will be allowed to stop the survey at any time. All data will be collected anonymously and further analyzed using Qualtrics. Your total time commitment will be approximately less than 15 minutes.

Are there any risks or discomforts? The risk associated with participating in this study is the possibility that the answers to the survey may be intercepted between the participant's computer and Qualtrics.com. To minimize these risks, we will collect all data anonymously and all answers to survey questions are de-identifiable.

Are there any benefits to yourself or others? If you participate in this study, you can expect to help speech-language pathologists have a better understanding of the role communication and social skills play in postsecondary education programs for individuals with disabilities and how these components are addressed within the current programs of study along with the current educational missions of the programs and their priorities. We/I cannot promise you that you will receive any or all of the benefits described. Benefits to others may include better information made available to speech-language pathologists and current/future directors of postsecondary education programs for students with intellectual disabilities.

Will you receive compensation for participating? There is no compensation for completing this survey.

Are there any costs? There are no costs associated with this survey, except for the few minutes of your time that it takes to complete the survey.

If you change your mind about participating, you can withdraw at any time by closing your browser window. Once you've submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University or the Department of Communication Disorders.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by NOT asking for any identifiable information. Information collected through your participation may be presented at state or national conferences and may be published in a professional journal.

If you have questions about this study, please contact Ashley Moates at aem0040@auburn.edu or Dr. Allison M. Plumb at amp0016@auburn.edu .

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or e-mail at IRBadmin@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE LINK BELOW.

I AGREE TO PARTICIPATE:

Click here to take survey.

The Auburn University Institutional Review Board has approved this document for use from October 21, 2019 to ------- Protocol #19-469 EX 1910

YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Thank you for your time,

Ashley Moates, Graduate student in Speech-Language Pathology

Allison M. Plumb Ph.D., CCC-SLP