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Congratulations to Janet Medina, McDaniel College, for being the 2017 Research Reviewer of the Year.

Congratulations to Barbara Hammer, University of Missouri, for being the 2017 Practice Brief Reviewer of the Year.
Facilitating Access to, and Success in, Higher Education: From the Editor

As we embark on a new academic year, colleges and universities have recently completed new student orientation programs; these programs are designed to be intentional educational transitions that enable retention and persistence to graduation. Student orientation leaders help new students matriculate to their new educational environments. Orientation is a most optimistic time with an agenda that includes learning campus traditions, meeting academic advisors, and adapting to new academic expectations.

Having served as a director of orientation and new student programs early in my career, I observed that for students with disabilities, and their parents, college was a brand-new chapter in their educational story. Higher education provides a way for students with disabilities to level the playing field and to gain self-determination and self-management skills (Getzel & Thoma, 2008). Many persons with disabilities decide to go to college not only to increase their knowledge, but also to develop their social skills and obtain proficiencies for future employment (Fuller, Healey, Bradley, & Hall, 2004).

As defined by the law in the United States (e.g., Americans with Disabilities Act, 1990; Americans with Disabilities Act Amendments Act, 2008; Individuals with Disabilities Education Improvement Act, 2004; Section 504 of the Rehabilitation Act, 1973) and many other nations, the educational focus for students with disabilities shifts from K-12, in which the intent is to enable success, to higher education which focuses on providing access. For those of us working in higher education, there should be a determination to seek to do more than simply providing access. Achieving intended academic outcomes (e.g., graduation, employment, graduate education) are possible for students with disabilities if they assume personal responsibility, have a strong work ethic, and, if needed, utilize the educational supports provided by disability services educators (Wessel, Jones, Westfall, & Markle, 2009). As students with disabilities cross the educational divide and become more self-reliant, disability services educators play a significant role in facilitating access to, and success in, higher education. Simply said, the goal of disability services educators is to help students be successful. However, that success depends on a student’s ability to readily adapt to the new expectations of higher education, determination to work hard, and persist to graduation. The lead article in this issue examines some of these topics including the relationships between student characteristics, the academic environment, and performance.

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The editorial team and review boards anticipate that the information shared in this issue of the Journal of Postsecondary Education and Disability will help disability services educators successfully facilitate access to, and success in, higher education for students with disabilities.

_Roger D. Wessel, Ph.D._
Executive Editor

**References**


College Students with Disabilities:
The Relationship Between Student Characteristics, 
the Academic Environment, and Performance

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Abstract
Increasing numbers of individuals with disabilities are pursuing postsecondary education and training to assist them in achieving satisfying careers and sustainable earnings. Unfortunately, students with disabilities face numerous challenges leading to less than desirable college completion outcomes, with lower rates than their peers without disabilities. As a result of this disparity, there is a growing interest in the factors predicting academic success for students with disabilities. The purpose of this study was to examine modifiable factors (i.e., peer support, disability services, faculty teaching, campus climate, and self-advocacy) as potential predictors of higher academic performance for college students with disabilities. Three hundred and twenty-five students with disabilities from three large universities completed an online survey and participated in this study. Findings indicated that only one modifiable factor: self-advocacy, predicts higher grade point average. Implications for secondary and postsecondary professionals are discussed.

Keywords: Students with disabilities, postsecondary education, academic performance, self-advocacy

Obtaining a college degree is considered by many to be “crucial to the pursuit of high-quality vocational opportunities” (Reinschmiedt, Sprong, Dallas, Buono, & Upton, 2013, p. 3). In particular, earning a college degree can be especially important for young adults with disabilities, who experience lower work participation rates than their peers without disabilities (Newman et al., 2011). Researchers have noted employment and wage differentials for young adults with and without disabilities that emerge as early as age 24, and suggest that the observed disparities in employment and earnings among middle aged and older adults with disabilities may begin relatively early on (Mann & Wittenburg, 2015). In today’s economy, it is difficult to attain viable employment without postsecondary education (Carnevale, Smith, & Strohl, 2010). Yet, greater challenges are faced by individuals with disabilities as is illustrated by the association between poverty and disability regardless of employment rates and education attainment levels. To change this likely trajectory, early and ongoing education for young and emerging adults with disabilities is of critical importance for securing employment with sustainable earnings (Nye-Lengerman & Nord, 2016).

Over the past forty years, we have seen a shift in education distribution among household income levels; and while the middle class itself is declining, a bachelor’s degree still appears to be key to maintaining upward social mobility (Carnevale et al., 2010). A bachelor’s degree is associated with lower unemployment rates and higher weekly wages (U.S. Bureau of Labor and Statistics [BLS], 2014). In a longitudinal study of young adults 18-25 by the Bureau of Labor and Statistics, those with higher levels of education were able to hold more jobs, worked more weeks, and were less likely to be out of the labor force (BLS, 2013). These figures underscore the importance of a college degree for maintaining employment and financial self-sufficiency. As a result, colleges and universities are seeing growth in their population of students reporting disabilities (Timmerman & Mulvihill, 2015). Despite this growth, students with disabilities as a group are not enjoying the same success as their peers without disabilities. Academic success,
often measured by grades and degree completion, is an outcome with real life implications. Students who attend college, but fail to earn a degree are subject to immediate and long-term financial consequences. Short-term consequences such as tuition loss, and possible loan repayment, become difficult for many with low earnings. Long-term consequences are the reduced job stability and lower lifetime earning potential for those without a bachelor’s degree (Baum & Payea, 2005).

**College Students with Disabilities and Academic Success**

National statistics on college attendance indicate that approximately 11.1% of college students reported a disability in the 2011-2012 school year (National Center for Educational Statistics [NCES], 2015). Young adults participating in the National Longitudinal Transition Study 2 (NLTS2), a nationally representative sample, reported completion rates up to eight years out of college at 34%. NCES reports completion rates for all students in the mid-50% range. National postsecondary educational statistics show some areas of clear disadvantage for students with disabilities, even when controlling for factors that are considered traditional predictors of college success (e.g., parent education, SES; Horn & Berktold, 1999; Wolanin & Steele, 2004). For instance, students with disabilities are at higher risk for poor academic performance, and early departure from college (Smedema et al., 2015). This pattern is surprising, since students with disabilities meet the same entrance criteria as all other students. For students with disabilities, methods for increasing retention and success have been focused on physical accessibility and providing academic accommodations (Wolanin & Steele, 2004), but have lacked attention to more universal approaches afforded to other students such as social or belonging interventions (Fleming, Oertle, Plotner, & Hakun, 2017).

The college experience itself has been shown to be different for some students with disabilities than their peers who do not have disabilities. For instance, students with disabilities have been found to demonstrate higher levels of emotional or psychological distress, and in some studies reported lower quality of life than their peers (Smedema et al., 2015). Students have reported feeling different than their peers, having trouble accessing accommodations, and in some cases facing bias or stigma from instructors, advisors, and peers (Baker, Boland, & Nowik, 2012; Dowrick, Anderson, Heyer, & Acosta, 2005; Yssel, Pak, & Beilke, 2016). Several explanations may support the common finding that students with disabilities are at risk for poor performance in the postsecondary environment, including those related to the student (e.g., poor preparation, lacking self-advocacy skills, poor adjustment), and related to the environment (e.g., inclusiveness, attitudes of teachers and peers).

**Possible Influences on Academic Performance**

Several factors have been shown to have a relationship with academic success, including both non-modifiable factors and those that are amendable to intervention or change. Findings across studies generate a profile of students who could be “at risk” for academic struggle: (a) first generation college students, (b) those from low SES backgrounds, (c) those with less intensive academic preparation, (d) students of color, and (e) students who are caring for dependent children (Fitchen et al., 2014; Mamiseishvili & Koch, 2011; O’Neill, Markward, & French, 2012). Time spent in employment (e.g., full- or part-time work status) has also been considered, however, results have been inconsistent in showing a relationship between hours worked and academic performance (Fitchen et al., 2014).

While useful to recognize who may be at increased risk for academic difficulty, research that stops at identifying only non-modifiable factors does not allow for intervention or policy changes (Fitchen et al., 2014). Additional student factors reflected in behavior and academic characteristics have been found to change student success. Specifically, academic engagement, often described as student efforts to participate and interact with faculty members and peers in social and educational activities as part of university programming, have been strongly linked to student success (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Strayhorn, 2012). However, climate plays a role in student perception of belonging and efforts to participate in campus activities (Shepler & Woosley, 2012), particularly the assessment of how others perceive students with disabilities (Dowrick et al., 2006; Hong, 2015; Lombardi, Gerdes, & Murray, 2011). Students with disabilities have been found to express higher levels of loneliness and social isolation than their peers (Herts, Wallis, & Maslow, 2014). Some have suggested additional support for students with disabilities to develop peer networks to ease the transition to the college environment (Herts et al., 2014).
Students’ understanding of their disability, how it impacts their academic performance (self-awareness), and knowledge of how to request accommodations (self-advocacy) have been linked to multiple outcomes in higher education, including performance, persistence, and satisfaction (Belch, 2004; Daly-Cano, Vacarro, & Newman, 2015; Lombardi et al., 2011; Terras, Leggio, & Phillips, 2015; Yssel et al., 2016). Getzel and Thoma (2008) reported critical themes and activities related to self-advocacy relevant to college students with disabilities, including: seeking disability support services, forming relationships with faculty and instructors, developing an on-campus support system, and gaining awareness and self-understanding of their own needs. Self-advocacy is recognized as crucial to getting one’s own needs met (Getzel & Thoma, 2008). For many, the college environment is the first time that the student is responsible for these tasks with or without assistance (White, Summers, Zhang, & Renault, 2014).

Student Characteristics, Academic Environment, and Performance

Based on the available literature, it is clear that the experience and academic performance of students with disabilities is nuanced and complex. Influences on performance likely include some combination of personal factors (e.g., self-advocacy, accommodations), and those related to the academic and social environment of the institution (e.g., experiences with faculty, perception of disability climate, social support). Particularly in the literature devoted to exploring issues related to students’ desire to identify and disclose disability status as part of the process of requesting reasonable accommodations, multiple scholars have suggested that student characteristics and their perception of the environment related to disability may impact student behaviors (De Cesarei, 2015; Marshak, Van Wieren, Ferrel, Swiss, & Dugan, 2010; Newman & Madaus, 2015).

Academic performance was selected as the outcome of interest in the current study for two reasons: (a) the continued disparity between students with disabilities and their peers without disabilities in degree completion, and (b) consequences of not completing a college degree can be felt in earnings over a student’s lifetime. The purpose of this study was to examine the impact of modifiable factors (i.e., peer support, disability services, faculty teaching, campus climate, and self-advocacy) and their relationship with academic performance for college students with disabilities. We also included non-modifiable factors (e.g., demographics) as control variables to explore the relative contribution of each type of predictor. The following research question was addressed: What is the relationship between demographics, social-environmental factors, and academic performance?

Method

Sample and Participant Selection

Participants were 325 students who were registered with the office of disability services from one of three large state universities (18.6% response rate). Each of the three university office of disability service staff sent an introduction to the study and the web survey link to all students who have documented their disability with their respective universities. The sample was mostly female (67%), and the majority reported their race as White (79%). Thirteen percent were first generation students. The average age was 27 years old, and the average grade point average was 3.26. Full description of study participants is available in Table 1.

Measures

The instrument used in this study contained three major sections: demographics, campus climate, and a self-reported grade point average. Participants were first asked to indicate gender, age, race/ethnicity, primary disability, age of onset of primary disability, and parent’s level of education. Second, the College Students with Disabilities Campus Climate Survey (CSDCC; Lombardi et al., 2011) was used. The CSDCC is a multi-faceted instrument designed to gain information on student perspectives of the postsecondary environment, aspects of instruction, and social support. The instrument contains nine scales with 40 total items. Respondents are asked to rate statements according to how often they are true (1 = “never true” to 6 = “always true”). We selected four of the nine scales because of their relevance to our study: peer support (α = .88, 4 items); disability services (α = .77, 4 items); self-advocacy (α = .80, 6 items); faculty teaching (α = .74, 4 items; Lombardi et al., 2011). Convergent validity was found between scales of the CSDCC and constructs related to student performance (i.e., grade point average [GPA], course efficacy) and social inclusion (i.e., roommate efficacy, social self-efficacy). In our sample, internal consis-
tency for the scales was calculated as the following: peer support ($\alpha = .80, 4$ items); disability services ($\alpha = .83, 4$ items); self-advocacy ($\alpha = .80, 6$ items); and faculty teaching ($\alpha = .87, 4$ items).

Consistent with previous studies, we asked students to self-report cumulative GPA (Butler, 2011; Fitchen et al., 2014). This indicator was used as a proxy for success in school and served as this study’s outcome measure. While there are certainly limitations to using self-reported grades as an outcome measure (Kuncel, Credé, & Thomas, 2005), there are practical concerns related to respondent privacy and Institutional Review Board (IRB) requirements that influence researchers use of self-reported versus objective data on grade point average (Gonyea, 2005). Based on findings that self-reported grades and other objective information that is known to the respondent can be reported with some accuracy, some scholars believe this information is adequate for use in research (Gonyea, 2005).

**Procedures**

The survey invitation was forwarded to students registered with the office of disability services (or equivalent) at three, large, public universities by office staff. Students who received the survey invitation and decided to open the survey were brought to a Qualtrics page with an informed consent statement. Students indicated consent by proceeding on to the survey questions. This study was approved by the IRB at the lead institution. In the informed consent document, students were invited to request alternate formats or assistance completing the survey if needed. No one requested accommodations or alternative format surveys.

**Data Analysis**

Data were downloaded from the secure Qualtrics server into SPSS version 22. Data were checked for accuracy and corrected where applicable (e.g., if participants were asked to enter an age in years but entered a birth year instead). Approximately 23% of the sample had at least one missing data point. Data were examined for patterns, and median imputations were used where missing data was random. A total of 23 participants had random missing data, and 27 data points were imputed using this method. Median imputation was selected because of the relatively small number of data points missing; this method is more conservative than mean imputation which has a higher risk of being influenced by sample variation. Median imputation tends to underestimate rather than overestimate variance (McKnight, McKnight, Sidani, & Figueredo, 2007). Variables were correlated in the expected directions, with no evidence of multicollinearity. Variables were entered into a two-step hierarchical regression to address the research question.

**Results**

The authors sought to investigate the relationship between demographics, personal factors, and perception of campus climate with student success (GPA). We wanted to understand the relative contribution of modifiable and non-modifiable factors, as well as how the combination of factors might influence the outcome of interest. To address this question we used a hierarchical linear regression with two steps: the first step included non-modifiable demographic factors (gender, race/ethnicity, disability duration, first generation status) and the second step included modifiable factors, including social-environmental influences, namely satisfaction with college choice and factor scores from the campus climate survey (faculty teaching practices, disability services, peer support, and self-advocacy), to predict GPA. The first step explained 3.4% of the variance in GPA, while the full model explained 17.3%, representing a significant improvement in prediction with the inclusion of the modifiable factors (nearly 14%). In the full model, the only significant predictors were age ($B = .008, \beta = .170, p = .021$), and self-advocacy ($B = .170, \beta = .355, p < .001$). The relationships between predictors and outcome in this case mean that in our data, those who are older and with higher scores in self-advocacy also reported higher GPA. See Table 2 for the model results.

**Discussion**

The purpose of this study was to examine the impact of modifiable factors (i.e., peer support, disability services, faculty teaching, campus climate, and self-advocacy) as potential predictors of higher academic performance for college students with disabilities. Studies of students with disabilities have suggested that there is an interaction between students, their perceptions, academic experiences, behaviors, and performance (e.g., Brady-Amoon & Fuertes, 2011; DeCesarei, 2015; Hong, 2015; Newman & Madaus, 2015). The findings of the current study indicated that
personal factors, i.e., age and self-advocacy were the only significant predictors of GPA among factors included. The average age of our participants was 27, which is older than the typical college students at four-year institutions. The expanded age range of our participants likely contributed to the finding that age and grades were related. Non-traditional students have different motivations and approach to learning which may influence their academic performance (Kenner & Weinermann, 2011) However, age is non-modifiable, so we will focus our discussion on the other significant finding related to self-advocacy. The strong role of self-advocacy in student performance is consistent with other results, and provides us with clear implications for supporting students with disabilities in post-secondary pursuits.

Limitations

The findings of this study must be understood within the context of several limitations. Our volunteer sample was recruited from three large, public universities, and our response rate was modest; however, it was within the expected range for people within this age demographic highlighted as difficult to recruit (Dillman, Smyth, & Christan, 2009). The perceptions of the respondents in this sample may not reflect those of college students with disabilities in general, particularly in light of the low racial and ethnic diversity in our sample. We assumed that responses gathered (e.g., grade point average, perceptions of their academic experience) were accurate representations of student experiences and situations. No efforts were made to verify or cross validate any of the information collected. Findings on validity of self-reported grades vary, with high correlation between self-report and objective measures in some studies and far lower correlations in others (Kuncel et al., 2005). Considering our population and the importance of privacy, we chose not to attempt to cross validate self-reported grade point average with school records as we believed that this additional step would drastically reduce our response rate. Future studies using grade point average as an outcome should include multiple measures of this variable to bring greater confidence to the findings. Additional research should be conducted in order to replicate and extend these preliminary findings, and further explore how specific preparation for post-secondary environments, self-advocacy behaviors, and academic supports influence performance among college students with disabilities.

Beyond Disability-Related Factors

Previous research has identified both similarities and differences among students with disabilities attending four-year institutions (Fleming & Fairweather, 2012; Jorgensen et al., 2005; Mamiseishvili & Koch, 2011). These findings share some consistency with the present study, in which none of the disability-related support variables, nor disability-related demographic variables were significantly related to academic performance. For instance, Fleming and Fairweather (2012) compared disability-related predictors of college going (e.g., type of disability, accommodations, and disability related services) and traditional predictors (e.g., family SES, parent education) and found that the traditional predictors accounted for a greater proportion of the outcome. Similarly, studying a nationally representative sample of students with disabilities, Mamiseishvili and Koch (2011) found that traditional factors (e.g., residential status, full time attendance, and first year grade point average) were statistically significant predictors of student persistence not disabilities-related factors (e.g., services, accommodations) nor level of academic or social integration. Jorgensen et al. (2005) also found that outcomes for students with and without disabilities were “virtually identical” except students with disabilities who took approximately one more semester to graduate on average (p. 103). It seems the impact of disability status on academic performance is nuanced, and likely is dependent on other factors such as self-advocacy, as found in the present study.

Self-Advocacy within the Higher Education Context

Self-advocacy and self-determination (a broader term that encompasses self-advocacy) are essential skills linked to success in postsecondary education, both in community colleges and traditional four-year colleges (e.g., Daly-Cano et al., 2015; Garrison-Wade & Lehmann, 2009; Lombardi, Murray, & Kowitt, 2016; Oertle & Bragg, 2014). Success in college requires significantly more diligence, self-evaluation, decision making, self-control, and time management than in high school (Field, Sarver, & Shaw, 2003). Various studies have shown a positive correlation between measures of academic performance and scores on self-determination scales for students with disabilities (e.g. Erickson, Noonam, Zheng, & Brussow, 2015; Field et al., 2003). Self-advocacy skills necessary to succeed in academics beyond high school also require interactions with the campus and campus
community. College students can learn these essential skills through brief interventions such as training (Palmer & Roessler, 2000; Summers, White, Zhang, & Gordon, 2014; White et al., 2014).

Despite the importance of self-advocacy and self-determination on academic achievement, students with disabilities often enter college with limited skills and practice (e.g., Fiedler & Danneker, 2007). Under the Individuals with Disabilities Education Improvement Act (IDEA, 2004), secondary educators and parents are the responsible authorities for academic supports and services until students with disabilities leave high school and/or reach their twenty-second birthday, whichever comes first. For some students, the abundance of supports provided during secondary education can reduce their responsibilities that limit opportunities to self-advocate, make decisions, and develop self-awareness of strengths and needs (Field et al., 2003; Izzo & Lamb, 2003). When students with disabilities transition into college, they become responsible for the identification and documentation of disability, as well as requests for accommodations (e.g., Banks, 2014; Field et al., 2003; Garrison-Wade, 2012; Palmer & Roessler, 2000; Oertle & Bragg, 2014), tasks for which many students may be unprepared or not prepared at all. Students with underdeveloped self-determination skills and little opportunities for practice during high school can be highly uncomfortable and lack confidence in postsecondary education settings. College students with disabilities have also expressed fears of negative stereotyping and marginalization regarding self-disclosure (Banks, 2014). Durlak, Rose, and Bursuck, (1994) observed that when students do speak with faculty and staff they lack clarity and comprehensiveness when discussing their disabilities and their need for accommodations.

Yet to identify themselves as having a disability with campus resources such as disability services, and to request accommodations and supports necessary, students must have self-advocacy skills (Getzel & Thoma, 2008; Yssel et al., 2016). Self-advocacy skills seem central to successfully navigating the disability determination, documentation, and accommodation request process, particularly in light of several articles detailing the complexities in and barriers to learning about the availability of services and the process for receiving accommodations (Association on Higher Education, [AHEAD], 2012; Cory, 2011; Dowrick et al., 2005; West, et al., 1993; Yssel et al., 2016).

Recommendations

The findings of this study highlight the role of student supports in improving institutional response to the needs of students with disabilities. Some of the responsibility lies with the students (and pre-admission preparation), but faculty and staff play a strong role in supporting student development and growth in self-advocacy as well. The following recommendations are presented for students, families, pre-college support professionals, and college and university staff.

Pre-Transition Preparation

As students’ self-advocacy and self-determination skills are often underdeveloped when they enter college, secondary and postsecondary personnel should utilize strategies to promote these qualities in students. Teachers and support personnel should model skills and behaviors, rather than simply advocate for students (Field et al., 2003). Self-determined professionals with personal and professional goals should be involved in creating policies and procedures that encourage problem solving and collaborative decision making (e.g., Field et al., 2003; Garrison-Wade, 2012; Garrison-Wade, & Lehmann, 2009; Getzel, 2008; Oertle & Bragg, 2014). Parents and professionals can promote self-advocacy and self-determination by offering students with disabilities opportunities for choice so that students can learn to take responsibility for decisions and actions (Field et al., 2003; Palmer & Roessler, 2000; Summers et al., 2014). Increasing the level of positive, clear communication between students and teachers, faculty, or other professionals positively affects students’ comfort in expressing themselves, asking for accommodations, and taking risks (Field et al., 2003; Getzel, 2008).

Interesting narratives from students who have developed self-advocacy skills prior to entering higher education pointed to early experiences with family members, educators, and counselors who encouraged, modeled, and required these young people to exercise these skills before they went to college (Daly-Cano et al., 2015; McCall, 2014). Respondents recalled these early experiences positively, and were appreciative of understanding that once the student graduated that they would have all of the responsibility in managing accommodations and getting their own needs met (McCall, 2014), even if some thought that teachers or counselors were “being meanies” and “making them do it all themselves” (Daly-Cano et al., 2015, p. 219).
Students learned to speak up for themselves, and to explain their needs to others with support so that they would know what to do once the support had faded. Even those students who had practice and felt prepared to self-advocate when beginning college sometimes needed to adjust their approach and/or increase advocacy due to changed or unexpected circumstances (Daly-Cano et al., 2015). It is clear that training in self-advocacy and self-determination, and opportunities to practice these skills are critical to being able to effectively do so independently (Palmer & Roessler, 2000).

College and University Based Strategies
Self-advocacy skills necessary to succeed in academics beyond high school also include various skills to interact with campus and campus community. Students must have self-advocacy skills to identify themselves as having a disability with campus resources such as disability services, and to request accommodations and supports necessary (Getzel & Thoma, 2008; Yssel et al., 2016). Particularly in light of several reports detailing the complexities and barriers in learning about the availability of services and receiving accommodations, self-advocacy skills seem central to successfully navigating this process (Dowrick et al., 2005; West et al., 1993; Yssel et al., 2016).

Successfully navigating and utilizing services available to all college students, such as writing or math labs, study skills groups, and other supports, may also help students with disabilities build academic skills (Getzel & Thoma, 2008; Oertle & Bragg, 2014). Creating a system of social supports within the campus community allows students with disabilities to find encouragement, comfort, relaxation, and role models for successful behaviors with friends, roommates, and peers (Field et al., 2003; Garrison-Wade & Lehmann, 2009). Forming relationships with professors and other faculty is also considered a vital skill to academic success (Getzel & Thoma, 2008). Meeting with professors to request accommodations or seek help or mentorship is important for many students with disabilities to receive one on one support (Getzel & Thoma, 2008). Some colleges and universities enroll students in First Year Success courses to help them to develop comfort and familiarity with leadership roles, asking for help, and learning what resources might be valuable to them as they pursue their degree.

Modifications to the Campus Environment
While much of the responsibility is on the students to have and exercise these skills, another area that may be modified at the same time is the academic environment. Studies of faculty and staff show gaps in knowledge on reasonable accommodations and disability law, as well as a lack of understanding of disability, and universal design for instruction (Baker et al., 2012; Hong, 2015; Oertle & Bragg, 2014; Sniatecki, Perry, & Snell, 2015; West et al., 1993; Yssel et al, 2016). Specific behaviors on the part of college personnel that students felt “stifled” their self-advocacy efforts were described as making negative comments about disability, expressing low expectations of students because of a disability (i.e., disability = inability), or refusing requested accommodations (Banks, 2014; Baker et al., 2012; Dowrick et al., 2005; Hong, 2015). Students discussed how poor experiences with instructors or advisors made them more tentative in their approach going forward. Some admitted that they have, after a bad experience, withheld accommodation requests until it is clear that the accommodation is needed for adequate performance or participation in a class. Interestingly, lack of prompt notification of accommodation requests can result in delays or inability to accommodate and suspicion or resentment on the part of instructors (Terras et al., 2015). This negative “spiral” is self-sustaining and creates a negative environment for students. Efforts to help faculty and advisors understand these issues, and how their own behavior influences student behavior around accommodation requests is likely to reduce the distance in communication and collaboration between students and faculty.

Educators, counselors, and disability-related support staff should work together with students and their families to assist with their career development, goal-setting, and planning skills in preparation for postsecondary education. However, assistance with career development and planning must also continue in postsecondary education settings so that self-determination and self-advocacy skills development is on-going and has relevance (Garrison-Wade, 2012; Gysbers, 2005, 2008; Solberg Phelps, Haakenson, Durham, & Timmons, 2012).
Conclusions

Students with disabilities are a growing sub-population on college and university campuses. Despite the increasing presence, there are still challenges for this group related to academic performance and degree completion. Completion of a college degree is closely linked to the ability to get a quality job with sustainable pay. Self-advocacy has consistently emerged as an important predictor of many key outcomes, including academic success. In this study, self-advocacy was the only significant modifiable factor, and the strongest predictor of academic performance. Developing these skills prior to college is key to increasing the likelihood of success in college. However, college and university staff also play a role in fostering continued development of self-advocacy skills, particularly in the way students with disabilities are perceived and how accommodation requests are considered. Increased awareness of disability laws, suppressing negative attitudes toward disability, and ensuring adequate supports for students with disabilities are all key to setting the stage for better outcomes for this population.

References


About the Authors

Allison R. Fleming received her Ph.D. in Rehabilitation Counselor Education from Michigan State University. Her experience includes working as a Rehabilitation Counselor for the State of Massachusetts and serving as a research assistant for multiple projects related to disability and employment. She is currently an assistant professor in the Department of Educational Psychology, Counseling, and Special Education at Pennsylvania State University. Her research interests include strength based and environmental contributors to successful education and vocational outcomes for individuals with disabilities. She can be reached by email at: apf5208@psu.edu.

Anthony Plotner received his Ph.D. in Special Education from the University of Illinois at Urbana-Champaign. His experience includes working as a Project Coordinator for a Federal training and technical assistance project aimed at improving employment outcomes for individuals with diverse needs. He is currently an associate professor in the Department of Educational Studies at the University of South Carolina. His research interests include postsecondary education for individuals with intellectual disability and secondary transition planning and services with an emphasis on interagency collaboration. He can be reached by email at: plotner@mailbox.sc.edu.

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Table 1

Sample Demographics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender Identity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>218</td>
<td>67.1</td>
</tr>
<tr>
<td>Man</td>
<td>107</td>
<td>32.9</td>
</tr>
<tr>
<td><strong>Racial or Ethnic Identity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American or Black</td>
<td>12</td>
<td>3.7</td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Asian American or Asian</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
<td>7</td>
<td>2.1</td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>Multi-Racial</td>
<td>5</td>
<td>1.5</td>
</tr>
<tr>
<td>White</td>
<td>287</td>
<td>79.3</td>
</tr>
<tr>
<td>Self-Identify</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Academic Status</strong></td>
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<td></td>
</tr>
<tr>
<td>Freshman or First Year</td>
<td>36</td>
<td>11.1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>54</td>
<td>20.0</td>
</tr>
<tr>
<td>Junior</td>
<td>83</td>
<td>25.5</td>
</tr>
<tr>
<td>Senior</td>
<td>89</td>
<td>27.4</td>
</tr>
<tr>
<td>Graduate/Professional</td>
<td>35</td>
<td>10.8</td>
</tr>
<tr>
<td>Other</td>
<td>17</td>
<td>5.2</td>
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<tr>
<td><strong>First Generation Student</strong></td>
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<td></td>
</tr>
<tr>
<td>No</td>
<td>279</td>
<td>77.1</td>
</tr>
<tr>
<td>Yes</td>
<td>45</td>
<td>12.4</td>
</tr>
<tr>
<td><strong>Type of Disability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD or Learning Disorder</td>
<td>114</td>
<td>31.5</td>
</tr>
<tr>
<td>Deaf or Hearing Impairment</td>
<td>14</td>
<td>3.9</td>
</tr>
<tr>
<td>Mobility Impairment</td>
<td>12</td>
<td>3.3</td>
</tr>
<tr>
<td>Intellectual or Cognitive Impairment</td>
<td>5</td>
<td>1.4</td>
</tr>
<tr>
<td>Brain Injury</td>
<td>25</td>
<td>6.9</td>
</tr>
<tr>
<td>Chronic Health</td>
<td>44</td>
<td>12.2</td>
</tr>
<tr>
<td>Psychological or Mental Health</td>
<td>80</td>
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<tr>
<td>Visual Impairment</td>
<td>7</td>
<td>1.9</td>
</tr>
<tr>
<td>Autism Spectrum</td>
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<td>3.6</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Satisfaction with College Choice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, I would make the same choice over again</td>
<td>219</td>
<td>60.5</td>
</tr>
<tr>
<td>No, I would make a different choice</td>
<td>104</td>
<td>28.7</td>
</tr>
</tbody>
</table>
(Table 1, continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>27.62</td>
<td>10.580</td>
</tr>
<tr>
<td>Disability Duration</td>
<td>13.43</td>
<td>11.51</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td>3.26</td>
<td>0.49</td>
</tr>
</tbody>
</table>

*Note.* 1 This total is not 100% due to missing responses.

Table 2

**Hierarchical Regression Model**

**Step 1: Non-modifiable variables**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B(SE)</th>
<th>β</th>
<th>95%CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>2.956</td>
<td>.23</td>
<td>[2.693, 3.218]</td>
<td>.000</td>
</tr>
<tr>
<td>Age</td>
<td>.009 (.004)</td>
<td>.184</td>
<td>[.001, .016]</td>
<td>.020</td>
</tr>
<tr>
<td>Gender</td>
<td>.106 (.063)</td>
<td>.105</td>
<td>[-.018, .231]</td>
<td>.094</td>
</tr>
<tr>
<td>Race¹</td>
<td>-.176 (.090)</td>
<td>-.122</td>
<td>[-.354, .002]</td>
<td>.053</td>
</tr>
<tr>
<td>Disability Duration</td>
<td>-.005 (.003)</td>
<td>-.126</td>
<td>[-.012, .001]</td>
<td>.103</td>
</tr>
<tr>
<td>First Generation</td>
<td>-.145 (.086)</td>
<td>-.034</td>
<td>[-.215, .125]</td>
<td>.602</td>
</tr>
</tbody>
</table>

**Step 2: Full model (modifiable and non-modifiable)**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B(SE)</th>
<th>β</th>
<th>95%CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.011 (.159)</td>
<td>.170</td>
<td>[2.699, 3.324]</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age</td>
<td>.008 (.003)</td>
<td>.071</td>
<td>[.001, .015]</td>
<td>.021</td>
</tr>
<tr>
<td>Gender</td>
<td>.071 (.060)</td>
<td>.071</td>
<td>[-.046, .189]</td>
<td>.234</td>
</tr>
<tr>
<td>Race¹</td>
<td>-.134 (.085)</td>
<td>-.093</td>
<td>[-.301, .034]</td>
<td>.117</td>
</tr>
<tr>
<td>Disability Duration</td>
<td>-.006 (.003)</td>
<td>-.142</td>
<td>[-.012, .000]</td>
<td>.050</td>
</tr>
<tr>
<td>First Generation</td>
<td>-.065 (.081)</td>
<td>-.049</td>
<td>[-.224, .094]</td>
<td>.421</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>.022 (.066)</td>
<td>.022</td>
<td>[-.107, .151]</td>
<td>.737</td>
</tr>
<tr>
<td>Faculty Teaching</td>
<td>.047 (.030)</td>
<td>.098</td>
<td>[-.102, .105]</td>
<td>.118</td>
</tr>
<tr>
<td>Disability Services</td>
<td>-.017 (.030)</td>
<td>-.036</td>
<td>[-.076, .041]</td>
<td>.558</td>
</tr>
<tr>
<td>Self-Advocacy</td>
<td>.170 (.030)</td>
<td>.355</td>
<td>[.110, .229]</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Peer Support</td>
<td>.027 (.030)</td>
<td>.057</td>
<td>[-.031, .086]</td>
<td>.357</td>
</tr>
</tbody>
</table>

*Note.* Dependent Variable: What is your grade point average?

¹ Race variable collapsed to binary (0 = White, 1 = Minority).
Universal Design and Disability: Assessing Faculty Beliefs, Knowledge, and Confidence in Universal Design for Instruction

Joseph K. Hartsoe¹
Susan R. Barclay¹

Abstract
The purpose of this study was to investigate faculty belief, knowledge, and confidence in the principles of Universal Design for Instruction (UDI). Results yielded statistically significant correlations between participant’s belief and knowledge of the principles of UDI. Furthermore, findings yielded statistically significant differences between faculty rank and the belief in the principles of UDI. Participants who identified as Professors showed a strong belief in the principle of Course Modification whereas Assistant Professors showed lesser belief in the same principle. Finally, all of the response means showed a statistical significance when compared to population parameters from previous research.

Keywords: Universal Design for Instruction, disability, pedagogy

Students with disabilities are attending universities at a greater rate than ever before, with an estimated 11% of the college population being comprised of individuals with disabilities (Snyder & Dillow, 2015). The data, which was collected in 2011-2012, suggests that with this significant enrollment, higher education has struggled to meet the needs of such a growing population whose diverse needs do not always mirror the needs of their peers without disabilities (Bansfield-Hardaway, 2010; Black, Weinberg, & Brodwin, 2014; Pliner & Johnson, 2004). Due to the different needs of students with disabilities, professionals within higher education might struggle to integrate these students successfully. Often, students with disabilities report feeling unsupported and underserved (Burgstahler, 2009; McGuire, 2014).

One of the best examples of how higher education has struggled to meet the needs of students with disabilities in the college environment is the method of instruction faculty provide to their students (Black, Weinberg, & Brodwin, 2015; Burgstahler, 2007; Cook, Rumrill, & Tankersley, 2009; Izzo, Murray, & Novak, 2008; Lombardi, Murray, & Dallas, 2013). Many in the disability community argue that the pedagogical model used in higher education perpetuates a learning environment that does not necessarily meet the needs of a diverse and growing population of students who might not learn in “traditional” methods (e.g., oral lecture; Burgstahler, 2007; Cook et al., 2009; Gradel & Edson, 2010; Hergenrather & Rhodes, 2007; Lombardi et al., 2013; McGuire & Scott, 2006; Pliner & Johnson, 2004; Shaw, 2011; Skinner, 2007; Zeff, 2007).

Higher education has changed over the course of history, and students with disabilities have gained a higher level of access to postsecondary education through laws that recognize their rights (Dallas & Sprong, 2015). In a growing movement, disability advocates have called for truly equitable access and total immersion in higher education for students with disabilities (Lombardi & Murray, 2011; Lombardi et al., 2013).

Disability services has played an increasingly significant part in the implementation of Universal Design (UD) in postsecondary education (Gradel & Edson, 2009; Mole, 2012). Accommodations made on campus have not necessarily met the needs of students with disabilities, and some argue that the time has come to move beyond providing minimal legal requirements (Black et al., 2015; Mole, 2012). Instead, disability services professionals have started to call for a new way of making higher education accessible

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to students through alterations to pedagogy (Gradel & Edson, 2009; McGuire, 2014; Mole, 2012).

Universal Design originated as an architectural concept focused specifically on making physical structures accessible to individuals with disabilities (Dallas & Sprong, 2015; McGuire, 2014; Zeff, 2007). In the 1970s, Michael Bednar gave birth to the idea that physical structures should be accessible to a diverse population. A prime example of such architectural design is a sloped ramp leading to a building wherein individuals using wheelchairs can access the door where stairs are also present. Access occurs not only for the individual with a disability but also for someone pushing a cart full of items into the same building using the same ramp.

With the original intent of UD being that a physical structure should be accessible to anyone wishing to enter, much of the same intent lies behind the implementation of Universal Design for Instruction (UDI) in higher education (McGuire, Scott, & Shaw, 2003; McGuire, 2014). The intent behind UDI is to provide access for all students approaching course content, ideas, and themes, regardless of their various life experiences and backgrounds.

Universal Design in the educational setting has taken many forms (Edyburn, 2010; Rao, Ok, & Bryant, 2014). Frameworks include Universal Design for Learning (UDL) (Rose, Harbour, Johnston, Daley, & Abarbanell, 2006), Universal Design for Assessment (UDA) (Thompson, Johnstone, & Thurlow, 2002), and Universal Design for Instruction (McGuire & Scott, 2006). All structures share characteristics that seek to enhance the pedagogical approach instructors take to facilitate learning with the students they teach (Lombardi, Murray, & Gerdes, 2011; Lombardi et al., 2013; Shaw, 2011). Universal Design for Instruction (UDI) is a framework that supports use of various instructional methods that serve to reach the greatest number of students and learning styles (Rao et al., 2014; Block, Loewen, & Kroeger, 2006). Use of UDI allows students of all abilities to have a more holistic learning experience, produces greater outcomes, and possibly decreases issues with persisting to graduation (Block et al., 2006; Izzo et al., 2008; McGuire & Scott, 2006). We elected to utilize the UDI framework because the first author has specific training in and has worked in several disability resource centers that utilized this framework. The concept of UDI in post-secondary education is to use nine basic principles that help make academia accessible to a much wider array of students, including those of various ability levels (Lombardi & Murray, 2011; Lombardi et al., 2013; McGuire, 2014). According to Scott, McGuire, and Shaw (2003), those principles include:

1. Equitable use—making classroom material accessible to diverse learning needs and style.
2. Flexibility in use—the practice of using a variety of instructional methods.
3. Simple and intuitive use—teaching in a straightforward and predictable manner.
4. Perceptible information—ensuring that course material is accessible to students regardless of their sensory abilities.
5. Tolerance for error—building diversity of learning pace and prerequisite skills into course process.
6. Low physical effort—designing instruction to minimize physical effort so that students can attend to essential learning.
7. Size and space for approach and use—instruction is designed with consideration for appropriate size and space for approach, reach, manipulations, and use regardless of a student’s body size, posture, mobility, and communication needs.
8. A community of learners—the instructional environment promotes interaction and communication among students and between students and faculty.
9. Instructional climate—instruction is designed to be welcoming and inclusive. High expectations are espoused for all students.

These principles are paramount for institutions of higher education to move forward with a pedagogical model that meets the needs of students with a diverse array of ability levels (Black et al., 2014; Black et al., 2015; Block et al., 2006; Lombardi & Murray, 2011). Without the principles of UDI, proponents could argue that pedagogical efforts in postsecondary education might become stagnant in a time that an increasingly diverse population of students is coming to college campuses. Furthermore, the use of the UDI principles engages all students in a more efficient way because not all students learn and process presented information in the same way (Black et al., 2014; Pliner & Johnson, 2004).

UDI is an update to the pedagogy of postsecondary education long awaited by students, particularly
those with disabilities (Black et al., 2015). One of the most significant reasons for the update to pedagogy is that the shift in teaching methods will not only help students with disabilities, but serve a generation of college students better who learn and process information in a fundamentally different way from their peers and past generations of college students (Black et al., 2014; Scott, Loewen & Funckes, 2003).

Recognizing that UDI in higher education takes an extensive amount of work and does not happen overnight is important (Lombardi & Murray, 2011; Lombardi et al., 2013). To many, UDI is a way to navigate and move forward in higher education with the goal of including the greatest number of students with a greater number of varying cultures, learning styles, experiences, and ability levels. We argue more research and attention must be paid to the concept of UDI if institutions of higher education are ever to be truly accessible (Black et al., 2015; Gradel & Edson, 2010; Scott et al., 2003; Stodden, Brown, & Roberts, 2011).

**Literature**

One of the most critical components to implementing UDI might be faculty attitudes toward a shift to UDI. LaRocco and Wilken (2013) discovered that faculty members (n=46) know the struggles students with disabilities face in the postsecondary environment, but that faculty were focused more on how pedagogical changes would affect them personally (i.e., requirements concerning effort, time commitment, and skill development). Furthermore, LaRocco and Wilken’s research indicated that 46% of faculty surveyed indicated they have an understanding of the basic principles of UDI but were not implementing those principles in their pedagogy or classroom. Gawronski (2014) had similar results in that almost 44% of his faculty participants (n=179) believed inclusive instruction was important; yet, they either never or only sometimes implemented UCI practices in the classroom. Unlike LaRocco and Wilken's findings, Gawronski attributed this discrepancy to a possible lack of knowledge or skills for implementing such practices.

Although orientation of the principles of UDI is important, more research and further efforts to implement UDI education into faculty training is needed to create a truly student-centered learning environment (Higbee, 2009; Lombardi & Murray, 2011; Pliner & Johnson, 2004; Scott et al., 2003; Stodden et al., 2011, Black et al., 2014; Roberts, Park, Brown, & Cook, 2011). Robinson and Hope (2013) argued that pedagogical training should begin in graduate degree programs, and with a mean of 74.40, most participants (n=200) agreed. Such research and education could serve to change the perspective and resulting attitudes of faculty concerning implementation of UDI.

In their research, Lombardi and Murray (2011) researched central factors that highlighted three overarching categories that determine a faculty member’s attitude, willingness to implement UDI in the classroom, and disability that provides insight into how faculty members might treat students with disabilities in their class. Results yielded that faculty members in the area of education (n=289) reported a more positive attitude toward accommodating students with disabilities and an awareness of disability law. Results from a later study by Lombardi et al. (2013) were similar in that faculty participants (n=612) had positive attitudes toward accommodating students through various practices; however, faculty attitudes correlated directly with the level of training faculty had received prior to the study.

Flores and Rodriguez (2006) argued that since the passage of landmark Affirmative Action legislation, the acceptance of diversity on college campuses has increased. The increase in acceptance could be, in part, due to faculty member’s realization that students of diverse populations, including students with disabilities, can be successful, or perhaps such increase in acceptance could be simply because individuals in higher education recognize that, regardless of their personal opinions, trends in the education of college students are changing (Scott et al., 2003). Regardless of whether faculty are more accepting of diversity in higher education, there is still a strong possibility that inequality in the attitudes and expectations of faculty towards individuals with disabilities exists and further presents a significant barrier that students within this population must navigate to make it to graduation (Black et al., 2014; Flores & Rodriguez, 2006).

Exploring the correlation between a faculty member’s use of UDI and their attitudes toward disability is important. Pliner and Johnson (2004) explained that a major challenge in changing the pedagogy to an UDI-friendly environment is the strong desire of faculty to maintain a long-standing status quo. Knoll (2009) and Banfield-Hardaway (2010) attributed part of the challenge of changing pedagogy in higher education to the dominance of a particular culture in higher education. Historically, such a culture has not
included individuals with disabilities or teaching in a method that seeks to meet the learning needs of a broad range of students from various life experiences or backgrounds (Banfield-Hardaway, 2010; Higbee, 2009; Pliner & Johnson, 2004; Shaw, 2011; Vega & Tayler 2005).

Vega and Tayler (2005) discussed part of the challenge in changing the understanding of pedagogy in higher education as being the way that faculty are trained and the pedagogical method that has been implemented, historically, in higher education. Although faculty members are well trained to be experts in their fields of study, traditionally, the classroom has been a place where the faculty merely transmit knowledge (Ertmer, 2005; Higbee 2009; Pliner & Johnson, 2004; Shaw, 2011; Vega & Tayler, 2005). Rose et al. (2006) proclaimed, “Typical courses in universities are dominated by two types of media: lectures and textbooks” (p. 140). The question then becomes: Are these methods effective in teaching students from various backgrounds and varying learning styles? For students with learning disabilities or for students with disabilities that affect gross and/or fine motor skills, the answer is: most likely not.

Friel et al. (2009) and Vega and Tayler (2005) argued that in a 21st century digital age, students should have access to the information faculty teach. According to King-Sears (2009), Kinney and Kinney (2008), and Vega and Tayler (2005), the role of faculty, who served previously as the only means of information dissemination to students, is no longer necessarily true given technological development and extensive use of technology of the current generation. As King-Sears noted, students have access to a myriad of information given the scope of the worldwide internet. Such advances in technology include the use of online platforms utilized by most postsecondary institutions wherein faculty have the ability to share digital content, such as lecture notes or digital copies of readings with students. The dissemination of course material in digital format gives students the flexibility to access information wherever they have access to the internet.

Outside of institution-controlled technology, the advent of technological tools, such as YouTube or Vimeo, has provided faculty the opportunity to present ideas and concepts in multimodal approaches to facilitate learning. Providing captioned videos that cover course content, demonstrate concepts, and represent ideas visually implements additional ways of aiding students' learning. The ability to comment and leave comments on the video site or platform allows for real-time feedback and promotes a community of learners.

Vega and Tayler (2005) contended that the faculty member’s role has shifted from solely transmitting information to acting in the capacity of a facilitator. In this role, faculty members are not necessarily responsible for ensuring a student learns the material, so much as faculty are responsible for assisting the student with interpreting the information. Advocates of UDI call for a redefinition of pedagogy that takes the focus of education away from the information that the faculty member transmits and places the focus on the way students learn and the experiences they have in the classroom (Gradel & Edson, 2010; King-Sears, 2009; McGuire & Scott, 2006; McWilliam & Dawson, 2008; Pliner & Johnson, 2004; Scott et al., 2003; Shaw 2011; Vega & Tayler, 2005; Zeff, 2007). Pliner and Johnson (2004) explained, “UDI engages faculty in thinking more broadly about the following: what they teach; why they teach it; and, why and how they assess student learning” (p. 107). Edyburn (2010) and Orr and Hammig (2009) argued that using UDI in creating curriculum is of importance for individuals with disabilities because changing the pedagogy to reach more students could lead to the day where academic accommodations afforded under federal law are no longer needed.

The purpose of our study was to analyze the potential relationship between faculty members' knowledge, confidence, and beliefs in the principles of UDI. Specifically, we wanted to know whether faculty were knowledgeable of UDI principles, their belief in the implementation of UDI principles, and their confidence level in exercising such implementation. An additional purpose was to discover whether certain demographic factors (i.e., faculty rank; biological sex) had any influence on faculty members' beliefs, knowledge, or confidence in the principles of UDI.

We modeled our study after several prior studies, all with a similar premise.

In their study, LaRocco and Wilken (2013) sought to assess the correlation between the level of concern faculty had regarding teaching students with disabilities adequately and their use of UDI. These authors used the Concerns Based Adoption Model (CBAM) which, “focuses on describing, measuring, and explaining the experiences of those attempting to implement an innovation” to collect data (p. 2). This measurement scale comprised a portion of the survey
instrument and established a faculty member’s initial level of interest in implementing change within their course and overall curriculum to serve the educational needs of students with disabilities better. LaRocco and Wilken assessed and compared the faculty member’s level of reported concern for students with disabilities to their use of UDI principles in creating curriculum for courses they taught. The current study complements the latter part of LaRocco and Wilken’s survey instrument by assessing faculty belief of the principles of UDI. Results from LaRocco and Wilken’s study showed that faculty members were most concerned with how implementing the updates to the curricula would affect them and how those updates would affect their amount of work.

In a similar study, Lombardi and Murray (2011) focused on measuring faculty willingness to accommodate students with disabilities and adopt principles of Universal Design (UD) in building their courses. Lombardi and Murray utilized the Expanding Cultural Awareness of Exceptional Learners (ExCEL) survey, a precursor to the ITSI. The ExCEL was divided into three sections: (a) demographic information, (b) questions about prior disability-focused training, and (c) questions pertaining to the perception of disability. The findings from Lombardi and Murray’s study indicated that female faculty were more likely than male faculty to accommodate students with disabilities. Also, tenure-track faculty appeared to be less accommodating and less willing to implement principles of UD in their courses than their non-tenure-track faculty peers were. Later, and utilizing the newly revised ITSI, Lombardi et al. (2013) produced research that indicated females with prior disability training had more positive attitudes than males in the subscales of accommodations, disability law and concepts, inclusive lecture strategies, and inclusive classroom, whereas males with prior disability training showed more positive attitudes in the subscales of accessible course materials, inclusive assessment, and course modifications. Finally, results from a study by Gawronski (2014) yielded findings that indicated age and ethnicity made a difference in faculty attitudes; however, results based on teaching status (i.e., full-time or part-time) indicated no significant differences between the two statuses. Gawronski did not report findings based on biological sex (i.e., male/female).

To guide the current study, we focused on four hypotheses:

H1: There is no statistically significant relationship between the faculty members’ scores of the Beliefs, Knowledge, and Confidence subscales concerning Universal Design for Instruction practices.

H2: There are no significant differences between reported mean responses (population parameters) and the responses of study participants on the Beliefs, Knowledge, and Confidence subscales concerning Universal Design for Instruction practices.

H3: There are no statistically significant differences between faculty scores on the Beliefs, Knowledge, and Confidence subscales of Universal Design for Instruction practices based on faculty rank.

H4: There are no statistically significant differences between faculty scores on the Beliefs, Knowledge, and Confidence subscales of Universal Design for Instruction practices based on biological sex.

**Methodology**

**Population**

The population for this study comprised faculty and instructors at a mid-sized, mid-south public university. A participation invitation was distributed to all faculty members employed at the institution (N=653), of which 85 agreed to participate (13% response rate). Sixty (71%) participants completed the survey leaving 25 (29%) who did not finish the survey. Of the remaining 60 faculty members, 25 (41.7%) had tenure status, 12 (20%) were working toward tenure, and 23 (38.3%) were non-tenure track. Thirty-six (60%) were female, and 23 (38.3%) were male. One participant (1.6%) did not indicate biological sex.

**Instrumentation**

**Inclusive Teaching Strategies Inventory** ([ITSI]; Lombardi et al., 2013). The Inclusive Teaching Strategies Inventory (ITSI) survey consists of 41 questions grouped into eight constructs under three domains: Beliefs—(a) Inclusive Classroom Strategies, (b) Inclusive Lecture Strategies, (c) Accommodations, (d) Course Modifications, (e) Inclusive Assessment, and (f) Accessible Course Materials; Confidence—(g) Disability Law; and Knowledge—(h) Campus Resources (Lombardi et al., 2013). Questions in the ITSI survey solicit responses related to a faculty member’s belief, knowledge, and confidence in the principles of UDI.
Lombardi and Murray (2011) conducted a field test of the ITSI’s predecessor, the Expanding Cultural Awareness of Exceptional Learners (ExCEL) survey, to evaluate for validity and reliability. Setting the criterion at a minimum of 0.70 for adequate reliability and a minimum of .80 for preferable reliability, Lombardi and Murray determined that the internal coefficient alphas ranged from 0.60 to 0.85 across the factors; the overall alpha coefficient was 0.88. In addition to a demographic section (e.g., gender, faculty rank, age), the ExCEL contained sections regarding prior disability-focused training experience and faculty attitudes and perceptions of disability. Lombardi and Murray developed the faculty attitudes and perceptions section based on Murray, Wren, and Keys’ (2008) survey regarding faculty perceptions of students with learning disabilities. In addition, Lombardi and Murray derived items from literature related to Universal Design for Learning (Rose, et al., 2006) and Universal Design for Instruction (Scott, et al., 2003).

Lombardi, et al. (2011) amended the name of the ExCEL to ITSI during their research. This change came after both rigorous development of the instrument and multiple validation studies, including Lombardi and Murray (2011). Results from a study by Lombardi and Sala-Bars (2013) confirmed structure of the ITSI used in Lombardi et al.’s (2011) study, which contained seven factors.

Data Analysis

We were interested in determining whether there was a statistically significant correlation between a participant’s beliefs, knowledge, and confidence in the various principles of UDI. In addition, we were interested in potential differences between the subscales of faculty participant belief, knowledge, and confidence in UDI and their reported professorial rank and biological sex.

To find the score scale for the beliefs, confidence, and knowledge questions of the ITSI survey, we computed the scale scores first. The Belief scale consisted of the subscales, Accommodations, Accessible Course Materials, Course Modifications, Inclusive Lecture Strategies, and Inclusive Assessment. The Confidence scale consisted of the Campus Resources subscale. After computing the scale score for each area pertaining to UDI, we calculated the means for each subscale.

The Pearson product-moment correlation coefficient (Pearson r) was used to study relationships between the subscales of the survey. Next, we applied a series of one-sample t-tests to compare the mean subscale responses to the published population parameters. Finally, we applied the ANOVA procedures to the demographic grouping variables and the sub-scales to analyze for differences among the identified group.

Results

The first action completed to test our hypotheses was to develop descriptive statistics for each of the scales and demographic metrics. The instrument scales are reported as average item responses for each scale. Frequencies are reported for the specific demographics of professor rank and participant sex.

Next, we wanted to test the hypothesis that there would be no statistically significant relationship between participant scores on the subscales of the three major ITSI scales (i.e., Beliefs, Knowledge, and Confidence). Correlations ranged from r = .260 for the relationship between the belief in Accessible Course Content and belief in Accommodations to r = .542 for the belief in Accessible Materials and the belief in Inclusive Classroom Strategies. Alternately, topics such as Campus Resources, which is a subscale a participant’s knowledge of UDI, showed little correlation with other topics. Table 1 highlights the correlations between the subscales.

The next hypothesis involved comparing scale results to the original results reported by Lombardi and SalaBars (2013). We used one-sample t-tests to compare the means to the reported parameters (Table 2). The results indicated the subscale means were significantly different from the reported statistics of the instrument.

To test the next hypothesis, we compared scaled scores across various faculty ranks (Table 3). Due to low frequency in two categories (visiting instructors and adjunct professors), we combined those categories into a new category (Visiting/Adjunct) to represent more equalized group sizes. With this adjustment, the Levene’s test indicated that all variances were equal across the groups, specifying that the ANOVA statistic was sound. The results of these comparisons indicated significant differences between both full professors and associate professors and associate professors and Visiting/Adjunct instructors on the subscale of Course Modification. Associate professors (x̅ =1.63) tended to rank lower than both full professors (x̅=2.92) and Visiting/Adjunct instructors (x̅=2.89) on that subscale.
Finally, \( t \)-tests were utilized in the last hypothesis by comparing scaled scores by participant sex (Table 4). The results indicated females scored higher than males in three specific subscales: Inclusive Lecture (\( \bar{x}=4.41 \) vs. \( \bar{x}=4.04 \)), Inclusive Classroom (\( \bar{x}=4.31 \) vs. \( \bar{x}=3.78 \)), and Inclusive Assessment (\( \bar{x}=3.58 \) vs. \( \bar{x}=3.11 \)).

Overall, the results from this study supported the hypotheses partially by indicating there are significant differences on several scales when comparing our sample to the reported population statistics. In addition, faculty rank comparisons resulted in significant differences between both full professors and associate professors and Visiting/Adjunct instructors in one subscale. Associate professors scored lower in making modifications to course content for diverse learners than did both full professors and Visiting/Adjunct instructors. In addition, participant sex comparison indicated that females scored higher in the three scales related to inclusive strategies.

Discussion

The purpose of this study was to analyze the potential relationship between a faculty member’s beliefs, knowledge, and confidence of UDI. An additional purpose was to discover whether certain demographic factors (i.e., faculty rank and biological sex) had any influence on a faculty member’s beliefs, knowledge, or confidence in the principles of UDI.

Numerous correlations from the data between Beliefs (Accommodations, Accessible Course Materials, Course Modifications, Inclusive Lecture Strategies, Inclusive Classroom, and Inclusive Assessment), Knowledge (Campus Resources), and Confidence (Disability Law) showed significance at both the \( p=0.05 \) level and the \( p=0.01 \) level (Table 1). The number of positive correlations is important because the results support the belief of several researchers that UDI is gaining momentum as a viable pedagogical approach (Higbee, 2009; LaRocco & Wilken, 2013; Lombardi et al., 2013; Scott et al., 2003; Tincani, 2004). The positive correlations found in this study among the various subscales suggest that faculty could be signaling their awareness of the needs of students and, therefore, might be more willing to consider implementing a new pedagogy that makes material more readily accessible (Higbee, 2009; Shaw 2011).

Pliner and Johnson (2004) suggested that because UDI is such a relatively new concept, experienced faculty might not have had much exposure to its concepts. This writing led us to believe that there was going to be a difference between experienced faculty (e.g., Professor) and faculty with less experience (e.g., Visiting/Adjunct instructors or Assistant Professors). Also, given King-Sears’ (2009) observation about the use of technology to facilitate several of the principles of UDI, we assumed, incorrectly, that experienced faculty might not have exposure to technology. The assumption was that they might be more comfortable using low-tech strategies (e.g., lectures) to teach. The results of the present study suggest that, although there is significance between the faculty ranks in one subscale (i.e., course modification), results indicated that associate professors were less likely than professors or Visiting/Adjunct instructors in making modifications to their courses to accommodate all learners. A plausible explanation could be what Tunguz (2016) called the investment of “emotional labor” between faculty of various tenure statuses. Although not connected directly nor guaranteed by most universities necessarily, gaining both tenure and a promotion from assistant professor to associate professor occurs concurrently usually. Tunguz noted that male tenured faculty were less likely to invest emotional labor in their students than male non-tenured faculty. Tunguz noticed insignificant differences in female faculty. More research is necessary to understand whether the results of both our and Tunguz’s studies indicate significance or trend.

The results in our study, when analyzed based on biological sex, are similar to those of Lombardi, et al. (2013), whose study suggested that women, overall, had greater belief, confidence, and knowledge of the principles of UDI compared to their male counterparts. The results of Lombardi, et al.’s study indicated women were more likely to engage in both inclusive classroom and inclusive lecture practices, but that men were more likely to engage in inclusive assessment practices. The results of our study supported those findings partially. The results indicated women were more likely than men to engage in all three inclusive practices. From a stereotypical standpoint, one explanation could be that women are more sensitive to the needs of those around them; however, this explanation lacks support. Unfortunately, there appeared to be a dearth of research to offer a plausible explanation of the differences found between the male and female participants.
Of the subscales, *Accessible Course Materials* had the most correlation with the other subscales. Positive statistical significance was high for a majority of the relationships with other subscales indicating that most participants who responded to *Accessible Course Materials* might believe positively in the other subscales pertaining to UDI. There was only one subscale, *Campus Resources*, where the relationship was not statistically significant. *Campus Resources* showed no correlation with any of the other subscales used to assess a faculty member’s beliefs, confidence, and knowledge of the principles of UDI. A feasible conclusion is that faculty might be well informed about the resources on campus regardless of any other beliefs, knowledge, or confidence they have about UDI.

**Limitations**

As with any study, this research contained several limitations. Perhaps one of the most significant limitations to this research is the low response rate. Although distributed to 653 faculty members, only 85 (13%) started or partially responded to the survey. Of those 85, 60 (71%) participants completed the entire survey, thus, limiting the number of responses usable for analyzing. According to Shih and Fan (2009), a low electronic survey response rate is not uncommon when conducting research.

A second limitation is the method in which we distributed the survey. The ITSI went to all 653 faculty members at the mid-sized mid-south teaching institution where we conducted our study. In choosing to distribute the survey to the entire 653-person faculty, we created a potential for strong response bias in this study. The potential for bias might have occurred because distributing the survey to every faculty member allowed those with a passion for UDI or disability issues to respond to the survey while giving those opposed to the topic the opportunity to ignore the invitation to participate.

The geographical location where this research was conducted could have presented a limitation to the research. The school is a mid-sized teaching institution in the mid-south portion of the United States. Responses might have been different if conducting the study in a different type of institution or geographical location. Differences in environments and geographical locations were two of the explanations Gawronski (2014) attributed to discrepancy in some of his findings. Not having a strong research component to the university or in the region in which the university is located could have created a limited exposure of participants to the principles of UDI. This could have affected participant responses.

As discussed by Lombardi and Murray (2011), a limitation of the survey instrument used in this study is the potential for response bias on the part of faculty. The ITSI is a self-report survey; therefore, faculty might have chosen to misrepresent their beliefs or exaggerate their knowledge regarding the principles of UDI. Additionally, given that the instrument relies on faculty self-report of their beliefs, the results might misrepresent actual use of UDI principles in courses participants teach.

One final limitation could relate to institution type. Lombardi, et al. (2013) conducted their study at a predominately research institution. One of the factors that might have contributed to why the means collected in our study are so markedly different from the population parameter in Lombardi, et al.’s study is because the institution where we conducted our study is a predominately teaching institution. A difference in the type of institution from previous research might have affected faculty training and lead faculty in Lombardi, et al.’s study to have a higher belief, knowledge, and confidence in the principles of UDI (Scott et al., 2003; Shaw, 2011).

**Recommendations for Further Research**

Changing how higher education approaches the education of students seeking postsecondary instruction has, and will continue, to evolve (Mole, 2012; Evans, 2008; Higbee, 2009; Izzo et al., 2008; LaRocco & Wilken, 2013). As the pedagogy changes, UDI will allow faculty to facilitate learning with a wider array of students (Scott et al., 2003). Modifying the ITSI to assess a greater number of UDI practices and capture more participant responses on more college campuses will help solidify a research base that allows for best practices to form.

Another suggestion for further research includes assessing the ITSI survey instrument against other existing Universal Design (UD) survey instruments. For example, Black, et al. (2014) used a method of combining research instruments from various authors, such as Leyer and Greenberger (2008) and Van Laarhoven, Munk, Lynch, Bosma, and Rouse (2007), to conduct their study of assessing the attitudes of faculty members toward UDI and disability in the classroom. In comparing the survey instruments, re-
searchers can consider and add further improvements to strengthen the validity of the survey.

Another recommendation for additional research is to differentiate between Universal Design for Instruction (UDI), Universal Design (UD), and Universal Design for Learning (UDL) more accurately, if possible, and clarify the attributes of each school of thought. At present, terms and theory are often used interchangeably in postsecondary education. This might cause a significant issue for reliability and validity for the research and implementation of updates to pedagogy.

A final recommendation is the expansion of faculty education in the area of UDI. Instructional Development and Teaching Excellence Centers on college campuses could provide existing faculty with required training on UDI principles. In addition, graduate programs, whose students are training to become faculty, could implement UDI awareness and principles within their college teaching courses (Robinson & Hope, 2003). Dallas and Sprong (2015) argued for universal design principles training for rehabilitation counselors (RC) and, of course, that training could begin in the rehabilitation counseling graduate programs. Implementation of those principles into course creation could aid graduate students and faculty in making accessible courses that benefit a greater number of students. Because the principles of UDI are a relatively new concept and each principle of UDI is extensive and vitally important, Teaching Excellence Center staff could facilitate an ongoing series of courses with each session covering one principle. Such an approach would allow faculty the opportunity to understand the individual principles better and how faculty could incorporate specific practices of each principle in their course instruction. Multiple studies referenced in this article yielded results indicating that those faculty with prior disability-related training had more favorable attitudes towards student with disability and implementation of UDI practices (see Dallas & Sprong, 2015; Lombardi et al., 2013).

Campus communities would be well served by a refocusing of the Disability Support Services (DSS) office on campuses. Often times, DSS offices focus on making appropriate accommodations for students with disabilities to make higher education accessible. A shift in the theoretical approach from a service provision model to a resource model could aid DSS in being better equipped to assist in the expansion of UDI on campus. If DSS was to focus more on being a resource to faculty in implementing UDI in their courses, the office’s responsibility of implementing accommodations could be reduced. Students would be served better by the pedagogical shift, and, potentially, the office could expand their mission in other ways to ensure that all areas of the university are more accessible to students with disabilities.

**Conclusion**

Many believe that the way students learn in the postsecondary setting has changed (Burgstahler, 2009; Cook et al., 2009; Edyburn, 2010; Ertmer, 2005; Evans, 2008; Gradel & Edson, 2010; Higbee, 2009; King-Sears, 2009; Kolb & Kolb, 2005; McGuire & Scott, 2006; Pliner & Johnson, 2004). The departure from the school of thought that professors needed knowledge only in their discipline has been an on-going topic of debate in higher education (Major & Palmer, 2006). Meeting this change and, therefore, meeting the needs of a diverse collection of students with a wide-array of abilities is through the knowledge and implementation of UDI in course curriculum (Lombardi et al., 2013; Pliner & Johnson, 2004; Zeff, 2007).

UDI is becoming as recognized as a practice that is in no way a legal requirement, but instead the best and correct thing to do to teach what is being called a new generation of learners (Edyburn, 2010; Gradel & Edson, 2010; McWilliam & Dawson, 2008; Pace & Schwartz, 2008; Vega & Taylor, 2005). That is, students who have disabilities, as they are coming to campus in greater numbers, but also students who utilize technology to aid in their learning more so now than ever before. The new generation of learners does not replicate previous models of education in which faculty are distributors of knowledge, but, rather, facilitators of the knowledge and resources to which students have access (Block et al., 2006; Burgstahler, 2007, 2009; Cook et al., 2009; Evans, 2008; Gradel & Edson, 2010; Higbee, 2009; King-Sears, 2009; Major & Palmer, 2006; McGuire & Scott, 2006; Pace & Schwartz, 2008; Rose et al., 2006; Scott et al., 2003; Shaw, 2011).

Results to studies, such as this one, suggest that faculty members are becoming increasingly aware of UDI and the practices that make the institution of Higher Education accessible for a greater number of students (Ertmer, 2005; Gradel & Edson, 2010; Izzo et al., 2008; Lombardi et al., 2013). Such practices
are hopeful as they show the commitment of a growing number of faculty members in higher education to provide course material in a way that is accessible. With that increase, however, comes the recognition that there is still room for higher education to grow in attaining a higher level of accessibility (McGuire & Scott, 2006; Scott et al., 2003). In fact, increasing the incorporation of UDI training in faculty preparation programs could boost the accessibility of instruction significantly and reach a greater number of students with diverse learning styles and needs (McWilliam & Dawson, 2008; Pace & Schwartz, 2008). Such practices are important as they show an institutional dedication to UDI and accessibility for students from a wide array of abilities and life experiences (Black et al., 2015; Gradel & Edson, 2010).

References


About the Authors

Joseph K. Hartsoe received his B.S degree in Political Science-Public Administration from Northern Illinois University and his M.S degree in College Student Personnel and Administration from the University of Central Arkansas. Joseph currently works in Disability Services at Texas A&M University where he has particular interest in working with students on the Autism Spectrum and students with Mental Health Disabilities. His research interests include inclusive pedagogical design and positive mental health for students in the postsecondary education setting. He can be reached by email at joeh@disability.tamu.edu.

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Table 1

*Correlations Among Participants Responses to UDI Subscales*

<table>
<thead>
<tr>
<th></th>
<th>Accommodation</th>
<th>Accessible Materials</th>
<th>Course Modification</th>
<th>Inclusive Lecture</th>
<th>Inclusive Classroom</th>
<th>Inclusive Assessment</th>
<th>Disability Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Materials</td>
<td>.260*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
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<td>.328*</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Inclusive Lecture</td>
<td>.138</td>
<td>.319*</td>
<td>.086</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusive Classroom</td>
<td>.372**</td>
<td>.554**</td>
<td>.185</td>
<td>.542**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusive Assessment</td>
<td>.306*</td>
<td>.338*</td>
<td>.491**</td>
<td>.238</td>
<td>.328*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability Law</td>
<td>.278*</td>
<td>.391*</td>
<td>.218</td>
<td>.217</td>
<td>.464**</td>
<td>.230</td>
<td></td>
</tr>
<tr>
<td>Campus Resources</td>
<td>-.093</td>
<td>.200</td>
<td>-.197</td>
<td>.035</td>
<td>.089</td>
<td>-.109</td>
<td>.249</td>
</tr>
</tbody>
</table>

*Note. * Correlation is significant at the .05 level (2-tailed). ** Correlation is significant at the .01 level (2-tailed).*

Table 2

*Comparison of Subscale Results to Norms*

<table>
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<tr>
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<th>Population Parameter</th>
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<th>Sub-Scale Score</th>
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</thead>
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<td>Mean</td>
<td>SD</td>
<td>α</td>
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<td>N/A</td>
<td>N/A</td>
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<tr>
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<td>0.592</td>
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<tr>
<td>Rank</td>
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<td>Male M±SD</td>
<td>Female M±SD</td>
</tr>
<tr>
<td>---------------</td>
<td>------</td>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
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<td>4.07 0.56</td>
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<tr>
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<td>4.41 0.69</td>
</tr>
<tr>
<td>Assistant Professor</td>
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<td>4.02 0.59</td>
<td>4.13 0.68</td>
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<tr>
<td>Professor</td>
<td>12</td>
<td>4.20 0.56</td>
<td>3.90 0.70</td>
</tr>
</tbody>
</table>

Table 3: ANOVA Results for Beliefs, Confidence, and Knowledge Subscales by Biological Sex

<table>
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<tr>
<th>Rank</th>
<th>N</th>
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<th>Visiting M±SD</th>
<th>Assistant Professor M±SD</th>
<th>Professor M±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources</td>
<td>14</td>
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<td>4.07 0.56</td>
<td>4.13 0.68</td>
<td>4.20 0.56</td>
</tr>
<tr>
<td>Law</td>
<td>16</td>
<td>4.02 0.59</td>
<td>4.13 0.68</td>
<td>4.20 0.56</td>
<td>4.20 0.56</td>
</tr>
<tr>
<td>Assessment</td>
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<td>4.13 0.68</td>
<td>4.20 0.56</td>
<td>4.20 0.56</td>
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<tr>
<td>Classroom</td>
<td>12</td>
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<td>4.20 0.56</td>
<td>4.20 0.56</td>
</tr>
<tr>
<td>Lecture</td>
<td>16</td>
<td>4.02 0.59</td>
<td>4.13 0.68</td>
<td>4.20 0.56</td>
<td>4.20 0.56</td>
</tr>
</tbody>
</table>

Table 4: ANOVA Results for Beliefs, Confidence, and Knowledge Subscales and Faculty Rank
Doggone Good?  
Potential Benefits of Assistance Animals for Students on College Campuses  

Amanda K. Polking¹  
Jeffrey H. D. Cornelius-White¹  
Tracy L. Stout¹  

Abstract  
The presence of and request for assistance, service, and support animals has skyrocketed on college campuses in recent years. The purpose of this literature review is to explore potential benefits in the utilization of assistance animals within higher education, especially as it concerns disability service offices. It begins with an overview of the dilemma of increased use of animals with limited shared knowledge base on the benefits of that use and the myriad of terms that are used to describe the therapeutic use of animals. It reviews relevant meta-analyses, moves to a focus of assistance animals in educational settings, especially with college students, highlighting the limited available information on the use of animals by university offices, especially the disability service office. Strength of the research in this literature review is limited due to narrow research availability, small sample sizes, qualitative methods employed in some of the studies, and the limited connections specifically to the dilemmas faced by disability offices in their decision-making about therapeutic animals. This paper concludes with recommendations for future research and for practitioners in disability service offices and related areas.  

Keywords: Animal assisted therapy, animal visitation program, pet therapy, service animal, disability service office  

Animals have been assisting humans for many years. In turn, humans have been depending on animals since the ancient time when animals provided resources of all types to aid in existence. Animals are known to provide food, clothing, transportation, shelter, comfort, and assistance and to this day even with the growth of mankind; we still depend on animals just as much as we did centuries ago. There is a growing body of support for the health and mental health benefits of pet ownership (Jennings, 1997; Sachs-Ericsson, Hansen, & Fitzgerald, 2002). These include benefits to the body, such as lower blood pressure, fewer medications and fewer physician visits, increased activities, improved safety, and social capital, such as being perceived as more friendly, attractive and less anxious and lonely.  

Pursuing a degree in higher education can be a stressful and anxiety provoking process. Due to the added stressors, the presence of and request for assistance, service, and support animals has skyrocketed on college campuses in recent years (Hoffman, 2015). For example, students are conveying diagnoses of high anxiety and stress specifically seeking approval to bring their assistance animals to campus and/or allow the animal to live in university housing. This influx of requests has increased discussions between and concerns from university disability service providers regarding their obligations to provide reasonable accommodations to the students (Goodin, 2014). University providers have to walk a fine line when inquiring about the animal to specifically determine if an animal is indeed a service, emotional support, or therapy animal. As identified by U. S. Department of Justice (2015) employees of covered entities can only ask two questions inquiring if the animal does indeed qualify as a service animal, “(1) Is this a service animal that is required because of a disability? and (2) What work or tasks has the animal been trained to perform?” (p. 2).
Due to limited research, controversial terms, and topics along with an influx of individuals inquiring to utilize animals on campus, this critical literature review aims to address the question: Is there a benefit to having an assistance animal present for students working with a college disability service office and what are the benefits? Tedeschi, Pearson, Bayly, and Fine (2015) attempted to clarify the terminology related to assistance animals, which can be broken down into service, emotional support, and therapy animals. This paper also looks into the use of animals for therapeutic and learning purposes, the rise of the service dog in general and how assistance animals specifically relate to students, college campuses, and the disability service office.

Definition of Terms

The field of animals assisting humans in therapy, companionship, and service for disabilities involve the use of a variety of terms and overlapping concepts. The term “assistance animal” is contingent on location and can denote the animal is able to perform a multitude of different tasks or work a specific job. There has been lots of confusion and controversy over the years related to the term “service or assistance dog” because of variation of how the term is used by individuals all around the world. Whereas this is not an exhaustive list, this section provides some clarifications of terms for practitioners and researchers alike though usage varies considerably.

**Animal assisted therapy (AAT).** The International Association of Human-Animal Interaction Organizations (2014) defined “Animal Assisted Therapy” as:

A goal oriented, planned and structured therapeutic intervention directed and/or delivered by health, education and human service professionals. Intervention progress is measured and included in professional documentation. AAT is delivered and/or directed by a formally trained (with active licensure, degree or equivalent) professional with expertise within the scope of the professionals’ practice. AAT focuses on enhancing physical, cognitive, behavioral and/or socio-emotional functioning of the particular human recipient. (para. 7)

**Animal visitation program (AVP).** Crossman and Kazdin (2015) defined “Animal Visitation Programs” as “any program that provides opportunities to interact with animals with the goal of reducing stress for participants” (para. 2).

**Assistance dog.** Support Dogs, Inc. (2015) defined an “assistance dog” as “any dog that is trained and certified to perform tasks related to someone’s disability. Assistance dogs can include service dogs, hearing dogs, guide dogs, psychiatric service dogs to assist with medical issues.” (para. 3)

**Pet therapy.** As defined by Giorgi (2013) “pet therapy” is

a guided interaction between and individual and a trained animal. It also involves the animal’s handler. The purpose of pet therapy is to help a patient recover from or cope with a health problem or a mental disorder. Pet therapy also is called animal-assisted therapy (AAT).” (para. 1)

Dogs and cats are the most commonly used animals however, fish, horses and many other animals can be utilized and the type of animal depends on the patients presenting problem. The interactions are planned and are structured to assist individuals with achieving specific goals (Giorgi, 2013).

**Service animal.** The Americans with Disabilities Act defined a “service animal” dogs or miniature horses “that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability” (Federal Register, 2010, p. 49163).

**Emotional support animal (ESA).** As defined on Service Dog Central (2015) an “emotional support animal” is a dog or other domestic animal that provides therapeutic support to an individual. The individual/handler is the only person who receives benefit from the ESA and with appropriate documentation from licensed individual or physician the ESA can live in "no pets" housing (such as apartments or dormitories) or to travel with the ESA in the cabin of an aircraft.

**Disability services office.** As defined by the Americans with Disabilities Act (ADA), the office extends coverage of section 504 to employment, public and private educational institutions, transportation providers and telecommunications, regardless of presence of any federal funding and protects all persons with a disability from discrimination in educational setting based solely on disability. Public institutions cannot discriminate based on student's disability and
must provide appropriate accommodations, and do not receive any additional financial support to provide support services or auxiliary aids, which is often overseen by a disability service office (ADA, 1990).

**Review of the Related Literature**

This review will give a broad overview of the animal-assisted therapy literature, with a focus on the educational use of assistance animals, look into college students and their interest in assistance animals, review current interventions with college students, and evaluate the intentional use of assistance animals in campus offices especially pertaining to disability services. The research questions guiding the review included: (a) Is there a benefit to having an assistance animal present for students working with a college disability service office? and (b) What are the benefits of having an assistance animal present for those students?

**Methodology**

A search of past and current research related to animal-assisted therapy, its educational use, and potential benefits was conducted during August 2015 through October 2015. Research into the literature was conducted by utilizing Ebscohost databases, PsychINFO, and Academic Search Complete. The Boolean operator AND was used to combine several keywords while conducted searches. Keywords included: therapy animal, animal assisted, animal assisted therapy, college, college students, counseling, dog, stress, and adult. Limiters were used and included: peer-reviewed, academic journal, and study (primarily quantitative or empirical). One journal title appeared in several conducted searches so a secondary search for related articles was conducted within the publication Anthrozoöis. Keyword searches within this publication included: dog, behavioral, college students, and office. A search of the online Missouri union catalog (MOBIUS) was searched and identified a handbook for animal assisted therapy. Multiple websites were examined based on mention within articles or being known national and local groups that were connected to the research topic. Legal sources and websites were also examined for laws and regulations such as the Americans with Disabilities Act.

**Overview of Research with Assistance Animals**

Nimer and Lundahl (2007) conducted a meta-analysis researching the efficacy of animal-assisted therapy (AAT) and presented the research in a quantitative manner coding aspects that could affect the outcome of the 250 studies, 49 of which met an identified set of standards. The investigation focused on seven variables derived from characteristics of the participant and the delivery of the animal-assisted therapy. The variables were limited to age of the participant, presenting symptoms, comparison group of the participants, type of animal, location of services, length of treatment and delivery method. The presenting symptoms were limited to medical (e.g., blood pressure, stress), mental health (e.g., depression, Alzheimer’s, well-being) and behavioral (e.g., childhood aggression, severe misconduct) problems. The type of animal utilized during each situation was also identified and limited to dogs, horses, aquatic animals such as dolphins, and other or combination group, which included rabbits and birds. The location of the therapy was examined and was limited to offices, camps, hospitals, or long-term residential facilities. The length of treatment was also taken into account and align with the mode of execution which was narrowed down to animal-assisted therapy, group delivery, or a combination. Overall, animal assisted therapy had the following effect sizes: $d = .39$ for behavior and $d = .52$ for medical symptoms. In other words, assistance animals seem to improve outcomes near a medium effect size, meaning the results are significant enough to be easily viewed. Small effect sizes generally mean that there is an effect, however, the effect it is only observed through meticulous study.

The results presented from Nimer and Lundahl’s (2007) meta-analysis found most studies (28 of 49) utilized dogs specifically—15 utilized controls, and 13 did not. The results for studies with dogs showed the following effect sizes: $d = .49$ for well-being, $d = .51$ for behavior and $d = .52$ for medical symptoms. In other words, assistance animals seem to improve outcomes near a medium effect size, meaning the results are significant enough to be easily viewed. Small effect sizes generally mean that there is an effect, however, the effect it is only observed through meticulous study.
The study found individuals with disabilities benefited more in terms of concerns regarding their medical problems than individuals without disabilities with an effect size of $d = 0.96$ in three studies with persons with disabilities, compared to a $d = 0.33$ effect size in five studies with general medical problems, showing large effects for persons with disabilities as concerns their medical symptoms.

In a similar review Sachs-Ericsson et al. (2002) researched the benefits of assistance dogs, specifically, service dogs for mobility and hearing dogs for individuals who are deaf or hard of hearing. They found 10 studies with service dogs and four with hearing dogs with sample sizes between 10 and 455. The studies included retrospective, cross-sectional, and three longitudinal studies. While not providing the quantitative synthesis that Nimer and Lundahl’s (2007) metta-analysis employed, the results showed fairly clear benefits, particularly in retrospective reports on general health maintenance and functional activity and participation results, such as increased job and school performance and performance of chores and daily tasks. Likewise, social benefits included increased self-esteem, independence, life satisfaction and decreased stress and depression. There were some contradictory results, particularly regarding changes to self-concept and problem behaviors of the dogs. The studies on service dogs and hearing dogs involve a similar but clearly different literature as compared to assistance animals, but represent the growing body of literature to support the performance, mental health, and social benefits of working animals.

**Educational Use of Assistance Animals**

The educational use of assistance animals was an area in which several of those benefits seem supported. There have been several studies on use of assistance animals throughout the educational lifespan. For example, Kotrschal and Ortbauer (2003) conducted a study to investigate the belief that dogs have a positive influence on the social behavior of school children. The class was composed of 24 children (14 male and 10 female) averaging 6.7 years of age. In this study they introduced three dogs, all of which were owned by the teacher, alternately into an elementary school classroom in Vienna, Austria. The dogs were gentle and friendly and the children were allowed to interact with the dogs in a respectful manner freely except for when the dog was resting on its mat. The study lasted two months with the first month being a control period in which the classroom was recorded without the presence of the dogs. The second month a single dog was present every day for the entire time the students were in the classroom. The children were video-taped three times per week for one hour each time during open teaching situations in which the students were not required to remain seated in their seats.

Findings of this study (Kotrschal & Ortbauer, 2003) revealed that the children exhibited interest in the dog. The male students spent on average 9.2% of their time in class relating to the dog in comparison the females spent 10.6% of their time. Remarkably, the students paid more attention to the teacher when the dog was present in the classroom ($Z = -3.91$). Likewise, when the dog was present in the classroom the children exhibited less aggression and less visible off task behavior ($Z = -2.17$). These represent very large effects, with larger results being seen with boys (who were more frequently off task) than girls.

In a similar study using mixed methods that researched the effectiveness of pet visitation on the behavior and emotional state of female adolescents, Conniff, Scarlett, Goodman and Appel (2005) randomly assigned twenty-three eligible people into two groups, ten in the control group and thirteen in a group that involved pet visitations. Prior to completion of the study, one individual from the pet visitation group and five from the control group were released yielding twelve participants in the pet visitation group and five in the control group. Participant ages ranged from 13 to 17 years of age with a median age of 16 mainly of Caucasian ($n = 11$) or African American ($n = 8$) descent. The majority ($n = 15$) were part of households headed by a single parent and were placed in the medium security Lansing Residential Center after committing non-violent crimes ($n = 14$), violent crimes ($n = 6$) or drug related offenses ($n = 3$). To complete the study Conniff et al. enlisted 22 volunteers and 18 animals (13 dogs, three cats, a rabbit and a llama) to meet with the participants on an average of five pet visitation sessions.

All participants were administered a Youth Self Report (YSR) assessment before the pets were introduced and no significant differences in the median syndrome scores, composite scores, or total scores between either the pet visitation or control group were noted (Conniff et al., 2005). Likewise participants of the pet visitation group completed the qualitative survey in which 66.7% of the individuals responded positively to seven out of the eight “likes” categories.
College Students and Interest in Assistance Animals

After reviewing the previous studies on educational use, a large population who could potentially greatly benefit from the use of assistance animals in an educational setting are college students. Studies have been conducted with college students and both pet therapy and assistance animals. Adamle, Riley, and Carlson (2009) performed a research study investigating 246 first-time freshmen college students regarding their interest in pet therapy for social support during stressful times. The study explored individuals who lived on campus and attended Ohio University. After all observations were recorded, the authors found the sample was fairly homogeneous as 98% were single (unmarried); 91% identified as white and 85% female. The average age was 18.3 years of age with a standard deviation of 0.8 years. The individuals participating in the study were required to attend two orientation sessions each semester during their freshman year and were notified in advance that animals would be present. Each orientation consists of about 50 students who all agreed to participate in the research. All participants were administered a two-part survey which consisted of 13 yes or no questions inquiring about the individual’s knowledge about pet therapy and prior interaction along with their interest in pet therapy while attending college away from home. After all students completed the questionnaire six handlers with their therapy dogs entered the room and permitted the participants to interact with the dog. All interactions were recorded and allowed time for the students to intermingle with the dog and handler. The authors concluded with the finding that 96% of students supported a pet therapy program at their university.

In addition to their interest in pet therapy, students were asked about the therapeutic effects of their own pets (Adamle et al., 2009). The vast majority (91%) of the individuals reported having a pet at home with 75% of the students identifying a dog at home and 46% having cats. Students with dogs at home communicated experiencing comfort and support from their pet (76.6%) in comparison to the individuals with cats at home who failed to note any significant benefits. More specifically, participants of the research expressed three specific themes: they missed their pet, expressed interested in pet therapy and desired pets to visit them in their residence halls (Adamle et al., 2009). Even though the authors found that 92.5% of participants considered animals as an integral aspect in their life, 90.3% of the individuals reported that their pets comforted them during stressful situations.

Somervill, Kruglikova, Robertson, Hanson and MacLin (2008) administered a two-phase study researching the physiological responses college students experience to a dog and cat. Their study involved 62 college students (28 males and 34 females) ranging in age from 18 to 29 for males (mean = 20.04) and 18 to 24 for females (mean = 19.21). All participants were asked to check one of three options, (a) I like dogs, (b) I do not like dogs, and (c) I neither like nor dislike dogs with the same three options being asked of cats. Participants were also asked to denote with a “yes” or “no” response whether they had a dog or cat currently living with them or at their parents. Throughout the experiment the blood pressure and pulse readings of each participant was taken at the beginning and end of nine experiment sessions with each interval lasting five minutes. Minutes one, five, and nine were utilized as baseline sessions in which no animal was present. At intervals three and seven, the participant was required to hold a dog during one session and cat during the other. During the five-minute interval the participant was encouraged to participate in casual conversation. The results of these finding were that there was no significant difference in holding the cat versus the dog in terms of diastolic or systolic blood
pressure. However, females had a higher pulse while holding the animals \( (p < .015) \) and during the time period immediately after holding either a cat or dog, females exhibited considerably lower systolic readings \( (p < .001) \).

It is interesting to note the therapeutic reactions that pet therapy animals and student-owned pets had on college students. Besides just feelings of comfort, animals can provide several other mental and physical health benefits to college students.

**Assistance Animals Interventions with College Students**

It is widely known that college life can be stressful for college students. Numerous studies have focused on reducing the anxiety and stress college students experience. Along this line, several studies focused on utilizing assistance animals for their role in reducing stress, anxiety, and even depression. Folse, Minder, Aycock, and Santana (1994) employed animal-assisted therapy to assess potential effects on college students’ depression. Results showed significant improvements on the Beck Depression Inventory (BDI) only for the nondirective, animal-assisted only group. Folse et al. (1994) employed animal-assisted therapy to assess potential effects on college students’ depression. The BDI was administered to 129 college students in a group setting which identified fifty-one people reporting in the mild-moderate range \( (n = 39) \), moderate-severe \( (n = 6) \), and extremely depressed \( (n = 6) \). The study involved 44 participants. Three of the extremely depressed declined participation and opted for private professional help, and others dropped out for various reasons. The participants were put into three groups: animal-assisted therapy alone (called the nondirective group), animal-assisted with psychotherapy (called the directive group), and a control group. The three individuals with BDI scores in the severely depressed range were assigned to the experimental group. Persons with moderate levels of depression were found in all three of the groups, though the control group pretest means \( (M = 12.78) \) were lower than those for the experimental group \( (M = 16.22 \text{ for directive, } M = 17.58 \text{ for non-directive}) \). Results on the post-test BDI scores showed the most improvement in the nondirective group \( (M = 5.67) \) compared with control group \( (M = 10.18) \) or directive group \( (M = 9.11) \) \( F(2, 41) = 3.69, p < .05 \). In other words, animal-assisted therapy alone showed the best scores and was superior to a combination with psychotherapy even though it began with the most depressed average score.

In a related article, Stewart, Dispenza, Parker, Chang, and Cunnien (2014) evaluated the effectiveness of an AAT outreach program on loneliness and anxiety of fifty college students. All participation was voluntary and took place in a residence hall lobby due to the nature of the study; and as confidentiality was a concern, students were not required to provide demographic information. All attendees were administered the Burns Anxiety Inventory (Burns AI) and University of the Philippines Loneliness Assessment Scale (UPLAS) before engaging in the pet intervention and then again immediately after the AAT outreach intervention along with a session rating scale and outreach program evaluation form. Participants were permitted to “drop in” anytime during a two-hour period in which they were allowed to interact with the therapy dog, the primary author of the study, or other attendees. Student interaction with the dog ranged from approximately five minutes to two hours. They connected in the following ways: pet, sat near, hugged, brushed, fed treats, played, and even drew or took pictures of the dog. Given the small sample size, the authors found significantly lower anxiety on the Burns AI in the post-intervention compared to the pre-administration \( (p < .001) \) and significantly less loneliness on the UPLAS \( (p < .002) \). Additionally, students were also asked to identify and rank their top three most helpful aspects of the outreach program in which approximately 84% of the participants indicated that interacting with the therapy dog was the most beneficial aspect of the program.

Connecting with known research, Crossman and Kazdin (2015) provided a different perspective to animal-assisted therapy in which they felt the term AAT was not accurate because the animals were not “assisting” with any specific activity or intervention. In turn they identified that the interaction with the animal is more about the experience (e.g., petting, talking to, looking at, interacting with) which is believed to convey a therapeutic benefit and branded any program whose goal was to decrease stress and impairment as an Animal Visitation Program (AVP) rather than AAT. Their research group found a list of 925 AVPs at a variety of colleges and universities around the country which identified that there is a considerable amount of difference in the type of group, target population, frequency, setting, etc. However, all programs share a number of important strengths. They are efficient,
providing very low cost for the number of people served. They provide flexible scheduling and very low stigma compared to other therapeutic approaches.

Likewise, Bjick (2012) noticed an interesting observation when conducting research regarding stress and arousal levels of college students in the presence of a therapy animal. This study consisted of 32 female participants between the ages of 18 to 20 years of age who were split evenly into four groups: the control, a group who experienced explicit observation of a therapy rabbit, a group that experienced implicit observation of the therapy rabbit, and a group who pet a stuffed rabbit. The difference between the two groups which experienced the live rabbit was that the explicit group was able to interact with the rabbit whereas the implicit group was not able to discuss the rabbit nor could interact with the animal during the 18-minute session. Research found there was no difference in stress levels between the four groups; however, arousal levels increased in the therapy animal groups with the live animal ($p < .001$). Ultimately Bjick found “the enthusiasm college students demonstrate toward animals may mitigate some of the excuses students use for not engaging in traditional mental health techniques” (p. 1).

Stress, anxiety, and depression are all serious health concerns. Certain situations can make these health issues more prevalent or more likely to occur. College is one of those situations. Many students who attend college may also be more susceptible to any of those mental or physical health concerns. Again, the use of animals may be a way to help ease those health issues.

**Intentional use of Assistance Animals in Campus Offices**

Previously mentioned studies reviewed the benefits of assistance animals in relation to college students in general. This section reviews studies that focused on the use of assistance animals within or originating from specific offices on college campuses. For example, Daltry and Mehr (2015) described a dog therapy outreach program connected with the counseling center of West Chester University in Pennsylvania. The study investigated two goals in looking into the ability to provide stress relief to the university students and to increase access, involvement, and improve views of the counseling center. The program was originally developed as a small outreach activity proposed to reduce students stress by providing the opportunity to spend a couple of hours with a certified therapy dog at the end of the semester at the campus student union. Since the student’s enjoyed petting, hugging, and playing with the therapy dog at the end of the semester, the counseling center decided to have the therapy dog visit campus on a more regular basis. The visits occurred on a monthly basis except for the last week of classes during final exams.

During the visits, 15 to 20 students would interact with the dog and at the beginning of the Fall 2013 semester Daltry and Mehr (2015) collected feedback at random via paper-and-pencil method during the first two dog therapy outreach sessions of the semester. Research found that 54 students participated in the research, 81% of which were female and 91% Caucasian. The individuals ranged in age from 18-32 years with 72% of them indicating that they had a pet at home. In terms of interacting with the dog, 53% of the individuals said they stopped by solely because they saw a dog in the student union and the other 41% of individuals heard about the dog being present in the student union via some sort of advertisement or from a friend. Ninety-four percent of the individuals stated that they would not have stopped to view the information provided if the therapy dogs were not present.

In terms of the questionnaire administered by Daltry and Mehr (2015), 79% of the students noted the therapy dog brought them exceptional value based on a 1-5 rating scale (1 no value, 5 exceptional value), 20% rated the value at a 4. On the scale denoting stress relief (1 no relief, 5 high amount of relief), 72% of the students answered with a rating of 5, 20% with a 4 and 8% with a rating of 3. Overall, the research found that students enjoyed the experience with the therapy dogs and described it as, “the best part of their day, it brightened their day and made them happy, it reduced their stress and they loved the dogs and this program” (as cited in Daltry & Mehr, 2015, para. 13).

Similarly, Goldman (2012) shared about a variety of universities that are allowing dogs onto their college campuses during final exam time to help students relax and to allow the students time to take a break from studying. Specifically, at Kent State University in Ohio, Macalester College in Minnesota, and now Emory University in Georgia, officials have observed positive effects from the presence of the canines. Therapy dogs can be found in counseling centers, libraries, pet-friendly dorms, and even libraries which allow students to check out the dog for a short time just as an individual would check out a book. Each
dog with their handler, who typically are faculty or staff members, have certain hours the dog is available to socialize with the students.

Kathleen Adamle, a nursing professor at Kent State University, began bringing her dog to campus in 2006 and now six years later the program has grown to 11 dogs that visit the campus throughout the school year. In addition to the research presented above, Adamle expressed she has plenty of anecdotal evidence that her program works, and she is hopeful to receive a grant that would allow her to continue to investigate her “Dogs on Campus” program further (Goldman, 2012). Similarly, universities have looked to the faculty, staff, and alumni to bring their dogs to campus during finals; some schools have connected with animal shelters which allow students to rent a puppy for a short time; and others have therapy dogs hanging around the counseling centers or university offices for students to communicate with as a means of stress relief and/or a judgement-free zone.

During the 2014-2015 academic year, Drexel University employed their first therapy dog. Jersey’s owner, Kathryn Formica, the coordinator of the Drexel Recreation Center believed involving a therapy dog in the recreation center would permit more students the availability to interact with the canine more than in the library during finals week. Formica was quoted, “I wanted to approach it from a different angle, I wanted to show that you can come here and relieve stress by exercising or petting a dog, and it doesn’t need to be something that always associated with an already high stress environment. You don’t need to wait until you’re already stressed; you can come in and constantly work on managing stress.” (as cited in Falcone, 2014, para. 6)

Falcone reported the use of therapy dogs and pet therapy has been commonly observed in nursing homes and hospitals. However, the prevalence of therapy dogs on college and university campuses has been increasing due the reported benefits found in a variety of studies which note that interactions with canines can reduce blood pressure, lower anxiety, and assist with depression in college students.

In a related article, Wells and Perrine (2001) administered a study to 257 Eastern Kentucky University students researching the effect of the presence of a pet in a professor’s office and the perceptions of the office and unseen professor. The 201 female and 56 male students were randomly assigned to view a photo of an office that contained either a dog (n=88), a cat (n=84), or no animal (n=85) along with a questionnaire in which the participants were to rate their first impressions of the professor’s office. The questionnaire was broken down into three parts, first section utilized a Likert scale ranging from 1-strongly disagree to 6-strongly agree, second section assessed demographic information, and the third was comprised of two questions asking individuals to rate their feelings about dogs and cats utilizing the same six-point scale.

The results presented by Wells and Perrine (2001) found that participants were very favorable toward dogs with a mean score of 5.3 on a six-point scale and moderately favorable of cats with a mean score of 4.2. Students perceived the office with the dog to be more welcoming than the office with the cat or no animal (p < .05) and similarly students perceived the professor of the dog to be friendlier than when the cat or no animal was present (p < .001). However, students perceived the professor with the dog to be busier and potentially less approachable than the individual with the cat or no animal (p < .001).

Allen, Blascovich, Tomaka, and Kelsey (1991) conducted an experimental study reviewing 45 female dog owners in the community who all reported they were in “helping” professions and experience high levels of stress in their jobs. Researchers observed the participants blood pressure, heart rate, and skin conductance while performing a difficult mathematical equation while they were alone, in the presence of the experimenter, their best friend, or dog. The authors found that in the presence of their dog (p < .0001) the women showed little or no physiological reaction to the stressful task; however, in the presence of their best friend (p < .0001) they exhibited a substantially higher reaction. As noted by Allen et al., “the presence of pets may induce positive feelings that are not evoked by one’s human friends during performance of a stressful task, thereby reducing situational threat” (p. 587).

In an exploratory study by Barker, Knisely, McCain, Schubert, and Pandurangi (2010) the authors attempted to research the physiological stress response patterns of human-animal interactions utilizing a sample of working, non-clinical adult dog owners in which the participants would interact with either their therapy dog (n = 5) or an unfamiliar therapy dog (n = 5). All participants participated in a 30-minute base-
line session in which they were given a stress task. Then the participants interacted with either their therapy dog or an unfamiliar dog for 60 minutes. After excluding an individual from the study because of not meeting medical criteria, the authors found there was a greater reduction in stress and anxiety from the group of pet owners that were unfamiliar with the dog ($p < 0.05$) compared to the higher levels of trait anxiety connected with lower levels of autonomic nervous system indicators of stress (systolic blood pressure, $p < 0.05$ and diastolic blood pressure, $p < 0.05$). In turn the findings suggest no matter if the individual knows or is unfamiliar with the therapy animal that relaxation would be experienced.

**Disability Offices**

Given that medical problems are improved for persons with disabilities more than others with assistance dogs (Nimer & Lundahl, 2007), use of assistance animals for disability service offices may have an empirical basis. In a study by Camaioni (2013), she examined the relationships developed at the University of Pittsburg during an animal-assisted therapy program called Campus Canines Program (CCP). This study was intended to show that meaningful relationships create greater satisfaction when it comes to education. Camaioni believed that social relationships assist students with creating and sustaining better student involvement which ultimately would lead to retention in the academic environment. The research study utilized two mixed-methods online instruments that were made up of both open (qualitative) and close-ended (quantitative) questions. The study was comprised of 69 students (51 female, 18 male). The students answered the Patient Health Questionnaire (PHQ-4) with scores categorized as normal (0-2), or levels of depression and anxiety in the mild (3-5), moderate (6-8), or severe (9-12) range. The students also answered questions concerning three different scenarios; (1) if it is easier to communicate with others in the presence of a dog, (2) if they talk to friends about the CCP and (3) if they talk to family about CCP.

Camaioni (2013) found that according to the PHQ-4, 22 of the students scored in the normal range, 34 in the mild, 11 in the moderate, and two in the severe range. When looking at the scores of individuals who believed it is easier to communicate with others in the presence of a dog there was a 24% difference between males and females, whereby males found it easier in a dog’s presence. When reviewing the second question which asked if the participants “always” talk to their friends about CCP, males acknowledged more to the response presenting with a 22% difference between males and females compared to a larger amount of females who noted that they “sometimes” talk to their friends about CCP with a 17% difference between females and males. When reviewing the responses to the last question researching if the individual talked to family about the CCP there was a larger percentage of females who sometimes talk to their family with a 16% difference between females and males compared to the percentage of males that always or often talk to their family with a 9% difference females to males.

Overall, Camaioni (2013) noted some themes after completing her research. First she found that 71% of the students either strongly agreed or agreed that it is easier to communicate with the presence of a dog. She also found that 38 (55%) of the students come to interact with the dogs such as petting the dogs (30 students), loving the dogs (19 students) and playing with the dogs (eight students). Another theme that surfaces from the data was that the CCP may provide physiological benefits such as stress relief and relaxation. Fifty-eight (84%) students responded that CCP provided them with physiological benefits and of that 23 (40%) of the students wrote that they received physiological benefits in the open-ended questions such as, “I feel relaxed and calm when I get to interact with the dogs. It decreases my anxiety” (p. 7).

**Legislation**

Considering the subject matter, it is pertinent to differentiate between the governmental agencies that oversee and dictate the guidelines associated with service, emotional support, and therapy animals. According the Americans with Disabilities Act (1990), “Dogs whose sole function is to provide comfort or emotional support do not qualify as service animals” (para. 3). Yamamoto, Lopez and Hart (2015) confirmed that handlers with disabilities are free to bring their assistance or service dog wherever they may go within the United States. However, the same cannot be said for pets or even therapy dogs. The Department of Justice and the Department of Transportation utilized a broader definition for assistance dog by incorporated “emotional support animals for reasonable accommodation as required by the ADA (Federal Register, 2003, p. 24875; U.S. Department of Justice, 2015). Consequentially, there is a paucity of research regarding therapy animals and the legalities associat-
ed with federal rules and regulations. The U.S. Department of Justice (2015) identified that emotional, therapy, comfort, and companion animals are not considered service animals under the ADA; however, it was noted that some state and local governments have laws that allow individuals to take emotional support animals into public places (p. 2).

Summary, Conclusions, and Recommendations

Summary of Findings

Originating from domestication dogs have taken on a variety of roles, including physical and psychological safety and comfort roles. Certain dogs may be considered assistance animals that have been trained to perform a specific job and aid an individual who may be deaf or hard of hearing, blind, or have some type of disability. Some dogs live day to day as pets and do not perform a duty however, others have been deemed as emotional support dogs due to the support they provide their owner when at home while some are certified as therapy dogs to support a variety of people in stressful situations.

Research has shown that interaction with assistance animals has identified medical benefits including decreases in blood pressure (Sommervill et al., 2008); lower anxiety and loneliness (Stewart et al., 2014); depression (Folse et al., 1994); and increases in arousal (Bjick, 2012). Overall, many have concluded that the decline in blood pressure can also be an indicator of decreased stress and anxiety (Adamle et al., 2009; Allen et al., 1991; Daltry & Mehr, 2015). Research from Camaioni (2013) corroborated with other findings about students receiving physiological benefits form the interactions with the dogs in a means of increased relaxation and decreased anxiety. Interestingly enough, research from Barker et al. (2010) suggested that persons received relaxation benefits even if the individual may not know the therapy animal and with minimal interaction. Collectively, the research suggests that individuals working in an office, which simply has an assistance animal present, may receive benefits from the animal.

Other qualities shown by research were the educational benefits of assistance dogs for all ages researched. Kotrschal and Ortbauer (2003) found that individuals who specifically are interested in dogs compared with those who are not, and males more than females, benefit educationally with a dog present in the classroom environment. Conversely, Conniff et al. (2005) discovered participants identified interactions with volunteers and assistance animals were equally helpful, suggesting that the dog may have a buffering effect to help people be more effective in assisting others with stress reduction.

More recently, dogs have been utilized in animal-assisted therapy and have been a part of animal visitation programs in many universities across the United States (Crossman & Kazdin, 2015). Adamle et al. (2009) found most college students missed their pets, were interested in pet therapy, and wanted animals to visit the dormitories. Folse et al. (1994) concluded animal assisted therapy (AAT) without any other intervention was superior than AAT and psychotherapy combined. Research also revealed the excitement individuals have towards animals may help alleviate or minimize some of the stigma and perceived obstacles college students may exhibit in terms of not pursuing mental health services to make help more accessible (Bjick, 2012). Similarly, Goldman (2012) noted students experienced benefits due to the availability of a dog to provide a nonjudgmental avenue to release stress and other emotions.

Nimer and Lundahl (2007) also found benefits with well-being, behavior, and medical symptoms which ultimately exhibited an improvement in behavioral concerns within an office setting when a dog was present. This study also noticed that individuals with disabilities received a greater benefit in terms of their medical conditions versus the research group of individuals without disabilities (Nimer & Lundahl, 2007). Comparatively, Sachs-Ericsson et al. (2002) presented research depicting clear benefits regarding general health maintenance, functionality, and participation. Such interactions ultimately increased job, school, and/or performance of daily tasks along with social benefits when interacting with hearing and service dogs.

Conclusions on Methods and Critique of the Literature

In the meta-analysis from Nimer and Lundahl (2007) they identified 49 studies that qualified for their research and found that 28 of the 49 utilized dogs. The results of their analysis, specifically in connection with dogs in offices, noted small to medium effect sizes in terms of behavior and well-being, and a medium to large effect size when it came to individuals with medical symptoms. The effect sizes with other animals exhibited similar sizes regarding
medical symptoms and well-being yet, a large effect size when it came to improving behavioral concerns in office settings. Similarly, Kotrschal and Ortbauer (2003) also experienced a large effect size and in turn recognized considerable increases in focus and concentration when a dog was present in the classroom environment.

Compared to the research conducted by Kotrschal and Ortbauer (2003), Conniff et al. (2005) found their research was skewed because the participants reported embellishing their responses due to concern their answers on the assessments would impact their length of stay in the residential center. Ultimately, Conniff et al. (2005) found the sample size of their study displayed significant weakness in the power of their study and potentially added bias to their results. Likewise, small effect size limits the ability to generalize the results to larger populations (Barker, 2010; Bjick, 2012; Stewart et al., 2014). Conversely, the studies researching college student populations and assistance dogs were composed of larger effect sizes (Adamle et al., 2009; Camaioni, 2013; Daltry & Mehr, 2015); however, they are not without their own limitations.

In research presented by Camaioni (2013) data were only obtained during one semester, which limited the number of students involved in the study. Shortcomings noted by Adamle et al. (2009) were that the students were self-selected to participate in the research and were aware an animal would be present prior to attending potentially resulting individuals having more interest in animals prior to participating in the study. Even though Daltry and Mehr (2015) experienced overall success they also fell short due to their study relying on students to drop-in to interact with the dogs. Social media was used as a means of advertising; however, more specifically the advertising was dependent on students following the counseling center on a particular social media channel. Many of the students impacted were individuals who randomly encountered the dogs in the student union at West Chester University instead of being made aware of the dogs through social media. Even with the limitations researchers could modify their study and possibly obtain better results during future research.

In summation, research shows there is perceivable advantage to having an assistance animal present in a variety of different areas. Consequently, it is believed that students of disability service offices would also experience similar benefits individuals experienced in studies reviewed. Such medical gains could contain any or all of the following, decreased blood pressure, anxiety, depression, loneliness, and potential for increased arousal. Ultimately, students completing exams in disability service offices could receive sizeable benefits by having the ability to interact with an assistance animal prior to taking their exam.

**Recommendations**

**For researchers.** Regardless of the limited research pertaining to this topic, there is great flexibility in terms of future studies that could be beneficial. Future studies could improve strength by obtaining a more diverse sample. Studies administered to college students during a single semester could be extended to multiple semesters, which could assist with the amounts of stress and other factors which were researched (Adamle et al., 2009; Camaioni, 2013; Daltry & Mehr, 2015). Limitations from the Conniff et al. (2005) study could potentially be minimized in future research studies of groups with comparable participants if the researchers attempt to build rapport with the individuals prior to administering the assessments. Another potential contributing factor to decrease the probability of participants embellishing responses could be to obtain a larger sample size. As a means of minimizing the limitations of studies such as Barker (2010), researchers could potentially increase the strength of their study by incorporating a control group along with a larger sample size of individuals with increased stress levels could also aid the quality of the results obtained.

Diversity within the sample size of Adamle et al. (2009) could potentially assist with improved results. The study by Camaioni (2013), could have decreased limitations by performing the data collection in the fall semester due to the potential that the students could have received a greater benefit because of an increased need in building relationships with the beginning of a new school year. In attempts of increasing success of future research, Daltry and Mehr (2015) could incorporate other university counseling offices to increase their method of advertising.

**For disability offices and other college personnel.** Employees of disability offices could potentially seek approval to incorporate an assistance dog within their office for use by a variety of staff and students. In regards to the use of assistance animals in offices, as well as those with college students, research shows a clear pattern of interest, reduced stigma for
help, and potential benefits. In practical terms, steps would need to be taken to ensure the safety of the individuals utilizing the assistance animal. Similarly, offices would need to obtain necessary paperwork and authorization from university officials allowing the assistance/therapy animal to be present in disability offices. Due to the nature of the disability office, individuals would need to send out a letter to all students associated with the office to inform them of the new employee. The canine would need to be allergen free to minimize any concern of individual’s allergic to dogs. A staff member of the disability office could take on the role as “handler” which would mean the individual would need to acquire a trained assistance dog from the certifying organization. The organization which certified the dog would also be responsible for carrying insurance in the incident of an accident. Even with the added workload by the disability service office employees, we have learned through this research that individuals of all kinds interacting with and in the presence of an animal also experience emotional and medical benefits.

For situations where disability offices are being urged to allow a support animal for a particular student rather than an animal within their own office, Goodin (2014) recommended conversations happen with a university physician to encourage more serious substantiation than a letter from a psychologist or counselor alone might convey. In cases in which a student requests an emotional support or non-service animal, the disability office could be involved requesting the individual and diagnosing practitioner to answer a series of questions pertaining to the request, and require supporting documentation of diagnosis. This protocol could assist disability service providers unskilled with psychological documentation to standardize a method of asking and receiving questions pertaining to each individual student. The dog would qualify to work within an animal-assisted therapy or interact with individuals of the disability office during moments of high stress and anxiety. Frequency of the canine presence in the office would depend on the college or university, however, research exhibited benefits by having the dog present on a weekly basis and more often during midterms and finals. This frequency is important because most disability offices provide accommodations to qualifying individuals and proctor exams for approved students. The dog not only could be present during times when the disability office is open, however, it could be put to use during times in need when students may experience loss of a classmate or faculty member at the university. Advertisement of the assistance animal would need to occur to aid in promoting the service.

In 2015 there were 925 universities participating in some sort of animal visitation program, which range from type, location, frequency (Crossman & Kazdin, 2015). Hopefully, with continued research and gained awareness on the topic of assistance dogs and disability offices, more assistance dogs will be found on college campuses and locations alike assisting individuals on decreasing stress, depression, blood pressure, and improving many other health related factors.

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College Students with Autism Spectrum Disorder: Perceptions of Social Supports that Buffer College-Related Stress and Facilitate Academic Success

Robert A. LeGary, Jr.¹

Abstract
This exploratory case study examined the reports by advanced undergraduate students with autism spectrum disorder (ASD) of perceived social supports that buffer college-related stress and facilitate academic success. The sample for this study was comprised of 10 advanced undergraduate students who self-identified as having ASD. These participants were enrolled at seven colleges from three states in New England. Two methods of data collection were employed: a paper-and-pencil survey and a semi-structured, in-person interview. Quantitative and qualitative research methods were applied to analyze the data from the surveys and interviews. Overall, participants perceived that they received emotional, instrumental, and informational support that helped to buffer college-related stress and facilitate academic success. The sources were primarily family members, friends, and professors. Implications and recommendations for higher education in planning and programming for students with ASD are discussed in addition to suggestions for future research.

Keywords: Autism spectrum disorder, higher education, social support, college stress, academic success

As the prevalence rate of autism spectrum disorder (ASD) has substantially increased over the past decade, more and more students with ASD are entering postsecondary institutions. As of 2016, the Center for Disease Control (CDC) released the current prevalence rate of autism in children as 1 in 68 with no change since the previous report in 2014. As early identification of ASD has increased, educational and life outcomes for children and youth with ASD have improved significantly given the protections and related services required under the Individuals with Disabilities Education Improvement Act (IDEA) of 2004 (Hurewitz & Berger, 2008). Students with disabilities and ASD have greater access to educational opportunities, and, therefore, significant strides in identifying and implementing effective educational strategies and interventions have been implemented (Hart, Grigal, & Weir, 2010). Much of the research on students with ASD has focused on the primary and secondary education levels (Glennon, 2001; Smith, 2007) with the respective strategies and practices for those developmental levels (DuCharme & Gullotta, 2013; Iovannone, Dunlap, Huber, & Kincaid, 2007; Myles & Simpson, 1998). Thus, more and more young adults with ASD who have successfully completed high school are eligible to enter postsecondary education settings (Camrena & Sarigiani, 2009).

According to a national longitudinal study conducted by the U.S. Department of Education, 47% of young adults with ASD had enrolled in a postsecondary institution within six years of graduating from high school (Sanford et al., 2011). Once students with disabilities receive their high school diploma or reach the age of 21, their rights and protections under IDEA are terminated. The federal legislation relevant to postsecondary institutions are Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. These policies have paved the way for greater access for students with disabilities to postsecondary education institutions and influenced supportive program development and a heightened awareness of accessibility and disabilities on campuses (Madaus, 2011). The Americans with Disabilities Amendments Act (ADAAA) of 2008 and Standards for Accessible Design of 2010 further broadened the interpretation of disabilities and in-

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increased ease and protection for postsecondary students with disabilities, especially those with ASD, to have access to accommodations.

Although students with ASD may enter college and receive accommodations under federal law, the graduation or completion rates are discouraging and problematic. Within six years of leaving high school, only 35% of those students with ASD enrolled in postsecondary education graduated or completed their programs (Sanford et al., 2011). Thus, postsecondary students with ASD are less likely to complete their college programs compared to students with no disabilities. This lower rate of completion for college students with ASD not only indicates a need for earlier transition planning (Chiang, Cheung, Hickson, Xiang, & Tsai, 2012), but it also suggests a higher probability of lack of college success and an increasing need for support once these students are attending college (Hendrickson, Carson, Woods-Groves, Mendenhall, & Scheidecker, 2013).

This exploratory case study examined the reports by advanced undergraduate students with ASD of perceived social supports that buffer college-related stress and facilitate academic success. College students in general, and college students with autism spectrum disorder (ASD) in particular, often experience high levels of stress specific to academic commitments, lack of time management skills and study skills, peer relationships, and group living (Glennon, 2001; Misra, McKean, West, & Russo, 2000; Novotney, 2014; VanBergeijk, Klin, & Volkmar, 2008). Researchers (Dennis, Phinney, & Chuateco, 2005; Rayle & Chung, 2007) have also reported that college students from marginalized backgrounds perceive their family, friends, faculty, and classmates as informal sources of social support as described by House (1981). Similar to other students with disabilities, students with ASD are more likely to be marginalized within the college environment, in and out of the classroom, and experience higher levels of college stress (Troiano, Liefeld, & Trachtenberg, 2010). Moreover, perceived social support has been shown to ameliorate perceived stress and relate positively to academic success for college students (Bryan & Simmons, 2009; Smith & Renk, 2007).

More specifically, this study focused on students who were enrolled beyond the first year at four-year universities in New England and have ASD. ASD encompasses a group of developmental disabilities defined by the symptom categories of impaired social and communication interaction, and restrictive, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, [APA], 2013). For this study, the advanced undergraduate students with ASD who were recruited to participate self-reported that they had no intellectual or language impairment, held an average to above average Verbal Intelligent Quotient (IQ), and matriculated at four-year universities. Academic success, in this study, was defined by students’ self-reports of their grade point averages (GPAs), courses attempted and completed, and matriculation status beyond the first year.

**Stress Related to the College Experience for Students with ASD**

Transitioning and adjusting to a postsecondary educational setting can be stressful for any student, with or without a disability. The ongoing adjustment to the postsecondary environment for students with ASD presents compounded challenges and stressors related to the academic and non-academic settings (Glennon, 2001; VanBergeijk et al., 2008). Based on brain imaging research studies, individuals with ASD have been shown to be more susceptible to increased and variable levels of stress throughout the day than are individuals without ASD (Lytle & Todd, 2009). Moreover, individuals with ASD tend to have co-occurring diagnostic features of generalized anxiety and social anxiety (VanBergeijk et al., 2008; White, Bray, & Ollendick, 2012).

Glennon (2001) explicated the two major aspects—relative to the characteristics of ASD—of the postsecondary setting that present the most stressful challenges: social relationships and activities and academic demands. Given the multidimensional deficits related to social pragmatics and judgment, theory of mind, and executive functioning, the ASD diagnosis significantly competes with an individual’s ability to negotiate the social landscape, relate to others positively, manage stress, and adapt to novel social situations (Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001).

Relatedly, students with ASD have reported that the most stressful situations were becoming involved in intimate relationships, disclosing their diagnosis to roommates, dating, and calling classmates on the phone (Glennon & Marks, 2010). These challenges are pervasive throughout the postsecondary environment where there are a variety of social situations with complex demands. Another study (White et al.,
2011) investigated the relationship between ASD and social anxiety disorder—as co-morbid diagnoses and co-occurring conditions—and the findings suggested significant overlap of social anxiety and exacerbated social skill deficits and social avoidance when presented with increased anxiety. The findings of these research studies indicated a higher level of susceptibility for students with ASD to social stressors related to the postsecondary environment.

Similar to residential living, the classroom environment also presents social stressors for students with ASD that may impede their academic performance. Classroom group activities are particularly stressful for students with ASD who have difficulty with reading verbal and non-verbal cues, social reciprocity, and perspective taking (Glennon, 2001; VanBergeijk et al., 2008). The composition of student groupings, academic task demands, and the expectation of reciprocal dialogue in these group activities require interpersonal skills that are of a primary deficit area for students with ASD. In fact, the level of support and accommodation required within the classroom, especially in the case of group work, goes beyond the typical supports provided for other academic activities, such as testing or note taking. The combination of co-morbidity and neurological atypicality associated with the ASD diagnosis presents a unique susceptibility to stress for these individuals who carry this diagnosis (VanBergeijk et al., 2008). Thus, the increased social, organizational, and work demands of the college experience in and out of the classroom pose innumerable challenges for students with ASD who require classroom and social supports that ameliorate stress and compete with academic success.

Research on Social Support and College Students with ASD

Research studies have revealed that there are significant positive relationships between college students’ reports of social support from informal sources and their academic success (DeBerard, Spielmans, & Julka, 2004; Friedlander, Reid, Shupak, & Cribbie, 2007; Smith & Renk, 2007). Researchers have shown that college students who perceive they have received social supports are more likely to manage stress and attain academic success (Skowron, Wester, & Azen, 2004). Empirical studies have also suggested the importance of informal social support sources, such as family members and peers, as reported by college students, in buffering college stress (Bryan & Simmons, 2009; Dennis et al., 2005; Heiman, 2006; Lombardi, Gerdes, & Murray, 2011; Smith & Renk, 2007). Therefore, the research clearly suggests that perceived social support by college students with and without disabilities buffers stress inherent in the college experience and helps with academic success.

Yet, there is limited research focused specifically on undergraduate students with ASD who perceive social supports as helpful in buffering stress inherent in the college student role and contributing to academic success. Although there have been studies involving college students with learning disabilities and their perceptions of social support fostering academic success (Heiman, 2006; Kowalsky & Fresko, 2002; Lombardi et al., 2011), there is limited social support research focused specifically on the reports of undergraduate students with ASD. Additionally, social support research over the past decade has focused primarily on postsecondary students who are first generation, of minority status, or with learning disabilities (Bryan & Simmons, 2009; Dennis et al., 2005; Heiman, 2006; Smith & Renk, 2007; Lombardi et al., 2011). A study focused exclusively on postsecondary students with ASD may fill a gap in the knowledge base and give voice to these students regarding their perceptions of social support from a range of sources including family members, peers, and college faculty and staff.

This type of case study may not only contribute to the overall knowledge base of social support, but may also provide insight into the experiences and perceptions of advanced undergraduate students with ASD. Similar to the literature on social support, studies focusing on students with ASD in postsecondary institutions are few and typically provided tertiary strategies and accommodations instead of empirical results based on self-reporting (Adreon & Durocher, 2007; Shattuck et al., 2012; Smith, 2007). These studies also placed more emphasis on the transition from secondary to postsecondary education instead of the ongoing postsecondary experience of students with ASD. Most important, this study may provide voice and agency to those college students with ASD, in their own words, based on their self-reports (Madriaga, 2010).

The perceptions of informal social supports by students with ASD may translate into more structural social supports that postsecondary institutions could incorporate into their student services programming and faculty and staff professional development.
uniquely related to students with ASD (Adreon & Durocher, 2007; Dente & Coles, 2012; Glennon & Marks, 2010). For example, training faculty on instructional and social approaches and implementing student peer-mentoring programs for curricular and co-curricular strategies could provide those structural supports specifically for postsecondary students with ASD (Wolf, Brown, & Bork, 2009). To this aim, an empirical understanding of the types, sources, frequency, and importance of social supports that buffer college-related stress and facilitate academic success for advanced undergraduate students with ASD may inform best practice, policy, and programming in both curricular and co-curricular settings.

Social Support Framework

Social support theory, with its operationalized dimensions, has been empirically supported by numerous studies conducted since the 1970s in settings from childcare facilities to factories (LaRocco, House, & French, 1980). It naturally lends itself to the college setting where there are a myriad of stressors related to academic performance similar to those in an employment setting. The buffering, or moderating, effect of social support mitigates the impact of stress for high-stress groups of people (House, 1981). House’s conceptualization of social support is more soundly based on the buffering effect toward stressors as perceived by individuals than are other models (Cohen & Wills, 1985). Additionally, House placed a strong emphasis on the subjectivity of perceptions of individuals when evaluating types and sources of social support in particular settings.

The tenets of House’s (1981) framework, other than the dimensions of types and sources, are the informal, non-intimate relations, the importance or value, and the quantity or frequency of supports. House suggested that informal, non-intimate supports (sources and types) have significant buffering effects on stress in a workplace setting outside of the more formal, intimate interpersonal relationships. In the case of advanced undergraduate students with ASD, this social support definition allows for providers of social support to comprise a broader group of people who may not be intimately related to these students. Students with ASD, based on presentation of traits associated with this diagnosis, lack social reciprocity, theory of mind, and empathic/perspective-taking connections with others (Olney, 2000; Wenzel & Rowley, 2010). With House’s conceptualization of social support, the emotional demands and social reciprocity with more personal relationships are not necessarily a prerequisite in order to receive social support. Different types of social support can be received from a variety of sources outside of network membership that impacts postsecondary academic success.

Emotional support. For House (1981), emotional support was the most important and is defined as a type of support based on the provision of care, concern, love, and trust from one person to another. House asserted that the receipt of emotional support was only as effective as in how it was perceived. Examples of emotional support for students with ASD include actively listening and conveying a sense of concern, caring, and trust proactively before problems arise (VanBergeijk et al., 2008).

Instrumental support. There is a clear contrast between emotional support and instrumental support insofar that instrumental support is defined as beneficial behaviors provided to help someone in need. Academic accommodations, such as distraction-free testing environment or a note-taker, and posted schedules and rules in the residence halls are excellent examples of instrumental support for students with ASD (Lytle & Todd, 2009; Wolf et al., 2009).

Informational support. Unlike instrumental support, informational support is predicated on the precept that information provided to a person may be used by that person to help him or herself. Providing information that is directly impactful in one’s life could convey a sense of caring and be directly helpful in someone’s attainment of success, such as passing a test or obtaining a job. Suggestions for informational support for students with ASD include sharing information about the campus layout/map, hours of operation of the bookstore and dining hall, and key bulletin boards with important announcements (Glennon, 2001; Wolf et al., 2009).

Appraisal support. Similar to informational support, appraisal support involves the transmission of information from one person to another. Appraisal support is comprised of information directly relevant to a person’s self-evaluation. Given that self-monitoring and self-estimation skills are difficult for students with ASD, providing self-assessment opportunities with peer or adult feedback in a proactive approach can be very beneficial to these students (Freedman, 2010). The theoretical lens of social support theory, as conceptualized by House (1981), provided an effective framework for examining the perceptions of
social support by advanced undergraduate students with ASD that buffer college-related stress and foster academic success.

Method

A case study design was utilized for this exploratory investigation of the phenomenon of social support as perceived by advanced undergraduate students with ASD within the context of the college experience. The case study approach is the most suitable for addressing the what, how, and why questions of research inquiry (Yin, 2014). This investigation of advanced undergraduate students with ASD, who are also a previously understudied population, was considered a revelatory case because it could potentially elucidate their perceptions of the types and sources of helpful social support during the college experience.

Sampling Process

The sampling approach for this study used an overall purposeful sampling strategy (Creswell, 2013). The type of sampling, in addition to being purposeful, was non-random. Network sampling, a method of non-random sampling, is a technique based on the social networks of multiple individuals who connect the researcher with participants who have direct experience with the phenomenon under investigation (Bryman, 2008). By design, this sampling technique not only involves the judgment of the network professionals who assisted in recruiting potential participants, but the judgment of the researcher since he outlined specific characteristics of participants to be sampled purposefully.

Upon approval of an Institutional Review Board (IRB), the researcher commenced recruitment by contacting professionals affiliated with autism advocacy organizations and college autism support programs to post flyers and share information about this study with potential participants who were attending four-year universities in New England. Once participants contacted the researcher for more information, they were recruited via a series of three emails. The first email was sent to the participants with an invitation to participate and a description of the study along with the informed consent form as an attachment. The two follow-up emails were sent one week apart to non-respondents only. As soon as an individual responded affirmatively to the researcher’s request for participation and signed the informed consent form, the researcher contacted the individual by email or phone to arrange a mutually agreed upon date, time, and location to administer the survey and conduct the interview during the same meeting. Appointments were made on a first come, first served basis. Once a date was set, the researcher emailed each participant a copy of the survey and the interview questions along with the confirmation of the date, time, and location of the meeting. The goal was to recruit a total of 10 advanced undergraduate students with ASD. Follow-up emails were sent to participants following the survey and interview meetings in order to acknowledge and thank them for their participation and to remind them of their rights as outlined by the informed consent form.

Participants

The sample for this study was comprised of 10 advanced undergraduate students who self-reported as having ASD. These students attended seven different four-year universities in the New England region and were recruited using a network sampling approach. The first 10 viable candidates were selected for this sample. As students who completed their first year of college, they would have a broader understanding of their college experiences beyond the transition experiences and of their academic success in continued matriculation. Six of the 10 participants reported working part-time. Six reported living at college, either on or off campus, and four stated that they lived at home. Table 1 contains the demographic information about this sample.

Data Collection Activities

This case study design included a two-method approach for data collection. Study volunteers were asked to complete a paper-and-pencil survey and to participate in an in-person interview. Procedures associated with quantitative and qualitative research were used to analyze the data, which consisted of survey data and verbatim transcripts of in-person interviews.

Survey. Each of the participants completed the College Stress and Social Support Survey ([C4S]; 2014), one of the tools for data collection developed by this researcher (Appendix A). This survey was adapted from and informed by The Child and Adolescent Social Support Scale developed by Malecki, Demaray, and Elliott (2000). Under the direction of this researcher’s dissertation advisor, a small-scale pilot was conducted involving three advanced under-
graduate students who self-reported having ASD and were not part of this study’s participant sample. This pilot study provided data on clarity, reasonableness, and efficacy of this survey instrument.

The first section, which focused on college stress, was comprised of five items that probed for kinds of college-related stress. Each item required the participant to select a number on a six-point scale which best described the extent to which they experienced the occurrence described by each statement.

The second section of the survey instrument included a table requiring the respondents to place an “X” in the boxes that best reflected the types and sources of social support that they perceived helped one to be successful in college. The table, including the types and sources of social support, were adapted from House’s (1981) social support framework (p. 23). Emotional, appraisal, informational, and instrumental supports were listed horizontally at the top of the table. The sources of social support included significant other, family members, classmates, roommates, friends, professors, college staff, counselors, co-workers, and work supervisors. They were listed vertically at the left side of the table. The respondents identified as many types and sources of social support as they desired.

**Interview.** The second method of data collection was a topical in-person interview. The focus of the interview was an exploration of the types and sources of social support perceived by advanced undergraduate students with ASD that buffered college stress and facilitated academic success. The format and questions for this semi-structured interview protocol were based on the method developed by Flanagan (1954) known as the Critical Incident Technique (CIT). According to Flanagan, the CIT method is “a procedure for gathering certain important facts concerning behavior in defined situations” (p. 335).

Using the CIT method (Flanagan, 1954) during the interview, the researcher described the topic of social support under investigation and asked the respondents to remember and describe a memorable event that was particularly stressful. Then, the respondents were asked to describe: (a) what led up to the situation, (b) what they did that was especially effective or ineffective, (c) the outcomes of their actions, and (d) why they felt the actions were particularly effective. Flanagan’s CIT method for the interview protocol was appropriate because the types and sources of social support (House, 1981) can be integrated into that protocol without compromising House’s model. The questions in the semi-structured interview guide addressed House’s four dimensions of social support.

**Data Analysis**

The researcher analyzed the data as a sequential process that allows the researcher to collect, manage, and organize data. Then, this process continued with the researcher engaging with the data by reading and reflecting which led to describing, classifying, and interpreting. Finally, the data was presented to elucidate the relationship between the survey and interview data.

**Analysis of survey data.** Preparation of the data for analysis started with the review of each survey for completeness and legibility. Then, each survey was labeled with a number for subsequent identification (i.e., P-1, P-2, P-3, etc.). Responses to items 1-5 from the first section of the survey (i.e., “College Related Stress”) were treated as frequency numerical data and entered into an Excel spreadsheet for analysis. Each row of the spreadsheet represented a participant and was coded with the participant number, as described earlier. The columns represented the items and were numbered accordingly. Item responses were entered as numbers. Frequencies per question item were computed based on ratings.

For the second section of the survey (i.e., “Social Support”), responses were tallied by participant with each one’s selection, as marked by an “X,” of type of social support (i.e., emotional, appraisal, informational, or instrumental) and source of support (i.e., significant other, family members, classmates, friends, professors, college staff, counselors, co-workers, or supervisor). These data were entered into an Excel spreadsheet. Each row of the spreadsheet represented the source of support while each column represented the type of support. The frequencies of selections of type and source of support by participant were entered as numbers, 1-12, in the spreadsheet. Lastly, a descriptive analysis was conducted on the data of both sections of the survey to describe the sample. The results of the survey were presented in narrative and tabular forms respective to each section and as a whole.

**Analysis of interview data.** Advice and suggestions provided by Creswell (2009, 2013) and Lichtman (2013) guided the interview data analysis process. The main procedures included preparing and organizing the data, generating themes, coding the data, offering interpretations in notes and memos,
and presenting the results. A verbatim transcript was created from the digital recording of each individual interview. The transcript had wide margins and ample space between the interviewer’s comments and the interviewee’s comments to allow for coding and analytic notes. The interviewer’s questions and comments were also highlighted to provide clear differentiation between the interviewer’s comments and the interviewee’s comments. In order to protect confidentiality, transcripts were free of names and any other identifiable information. The same label assigned to the individual survey was also assigned to each interview transcript for ease of reporting data. Digital recordings and written transcripts were catalogued, filed, and stored in the researcher’s secured office for the duration of the study to ensure that each participant’s confidentiality was protected. Participants were given the opportunity to review their transcripts for accuracy.

Following the organization of the data, the researcher began the process of analyzing data by reading each transcript multiple times to get a sense of its whole and details before breaking it down into parts. The data analysis process included coding, categorizing, and conceptualizing (Lichtman, 2013). Coding involved chunking text data by phrases, sentences, or paragraphs and labeling those categories with a term. These segments of text that appeared to be salient to the purpose of the study were color-coded with different colored highlighters with similar text segments coded with the same highlight color. A code chart was created to identify and define the units as they emerged, and notes and memos were written to capture impressions. Categories, themes, and concepts with corresponding coding were refined and modified as many times as necessary, and redundant units were eliminated.

During the summarization of the coded data, the constant comparative method, which involved inductive category coding while simultaneously comparing all topics or concepts, was used to determine similar or distinctive characteristics of categories (Ary, Jacobs, Sorensen, & Walker, 2014). Through this method, new categories emerged and similar categories were combined for greater meaning and understanding. Conversely, the discrepant data analysis method, which allowed the researcher to identify negative or discrepant units that were contrary to the main categories or topics, provided additional refinement and revision of categories and themes. This method competed with the researcher’s first impressions or category formations and provided a counterbalance or different perspective on a category or pattern. The results were organized according to the concepts or themes that emerged and the types and sources of social support perceived by the participants that buffer college-related stress and facilitate academic success. The themes and sub-themes were presented and representative quotes from participants were included.

Results

Study participants’ reports of the social supports they perceived helped to buffer college-related stress and facilitate academic success revealed that emotional support was the most frequent type of support received, with family members cited as the primary provider. Participants also revealed that professors and friends were perceived to provide a high level of instrumental and informational support. Overall, participants perceived that they received emotional, instrumental, and informational support that helped to buffer college-related stress and facilitate academic success and the sources were primarily family members, friends, and professors. Table 3 details the sources and types of social supports reported by the participants.

Experiencing College-related Stress

The analyses of the survey and interview data revealed that all of the study participants (N = 10) experienced college-related stress some of the time or more often. The data from the survey responses indicated that six of the participants experienced stress from trying to balance coursework with self-care almost always or always. Additionally, five of the participants reported that they experienced stress related to day-to-day performance of tasks related to their courses almost always. Response means for the stress items ranged from a high of 4.30 (SD = 1.19) for item 4, “I experience stress from balancing coursework with personal responsibilities” to a low of 3.40 (SD = 1.56) for item 1, “I experience stress from being a college student.” Table 2 displays the number of participants who identified which items were perceived to be sources of college-related stress.

During the interviews, participants talked most about experiencing stress related to being a college student. Participants also provided examples of stress related to day-to-day performance of tasks related to
their courses. Data from the surveys and interviews suggested that daily hassles were the least significant source of stress.

For example, Participant-1 was clear that doing the actual homework was not a source of stress, but the self-imposed pressure of doing better on the upcoming exam in order to increase his overall grade was experienced as intense stress that also increased his co-morbid anxiety:

I think it’s because when I start really stressing out about a particular topic, my ability to learn the subject dramatically drops off. Then, I start getting stressed out and I start feeling ill, physically. And then I run the risk of not being able to go to class or something.

He articulately described a psychosomatic response to stress and anxiety related to the performance pressure to meet a certain level of achievement.

Referring to unexpected change and the lack of chunking strategies (i.e., breaking information into smaller parts for understand) on the part of the professor, Participant-6 described an extremely stressful experience due to a change in professor mid-semester and his subsequent adjustment struggle:

This was the last semester. I was taking an English course, and I’m not really great at it. But, I was taking an English class, and I was doing okay. Then, the professor left midway through the semester and this other professor [did] not like my learning style. It was like work as quick as possible, and she wanted to get as much in as possible and didn’t really break it down.

According to this participant, the new professor seemed to be moving through the material at a rapid pace, had limited to no office hours, and presented information in an overwhelming manner. This participant explained how the large chunks of material presented at once with no checks for understanding from students increased his stress level and negatively impacted his performance on quizzes and exams.

**Emotional Support**

The analyses of the survey and interview data revealed that all ten of the participants perceived emotional support that buffered college-related stress and facilitated academic success. In the survey, family members and friends were both identified as providing the most emotional support. During the interviews, all of the participants described instances in which they perceived emotional support that buffered college-related stress and facilitated academic success. Similar to their survey responses, the participants spoke most often about family members being their source of emotional support.

As an illustrative example, Participant-7 expressed the importance of receiving social support from his mother during exam time or when he was confronted with a challenging class. He described a situation during the semester prior to this interview when he was overloaded and he said, “I really broke down and I had a lot of stuff overdue and I didn’t feel comfortable approaching my teachers about it.” He further emphasized, “It got me overwhelmed and I was really, really stressed out.” He described how he contacted his mother and she was encouraging, caring, and reassuring by telling him, “You don’t need to be a perfect student. You’ve come a long way since high school.” Notably, this student identified that during his contact with his parents, their validation of his abilities and encouragement allowed him to feel more comfortable to talk with other people, such as friends and professors, about his stressors.

Referring to emotional support from his parents, Participant-3, in his junior year at a Vermont college, stated that he reached out to his parents when he was taking a class where the professor provided little structure and guidance. He described his frustration that the professor allowed students to be self-directed and that this approach was not helpful since he required clear expectations and guidance. He said, “I vented to my parents about it and they didn’t have much to say; just part of life and part of college. I really don’t talk to my friends about that type of stuff.” Even though this student reported that his parents provided listening as a type of emotional support, he differentiated between his parents and friends by noting that he was not able to share this stressful situation with his friends, but he shared it with his parents.

**Instrumental Support**

The analyses of the survey and interview data revealed that participants ($N = 10$) perceived instrumental support that buffered college-related stress and facilitated academic success. In the survey, professors ($n = 7$) were identified as providing the most instrumental support with college staff ($n = 5$)
and family members \((n = 5)\) following. During the interviews, all of the participants described instances in which they perceived instrumental support that buffered college-related stress and fostered academic success. Similar to the survey responses, they spoke most often about professors \((n = 6)\) being their source of instrumental support.

In identifying his preferential source of instrumental support, Participant-8 explained the access and benefit of seeking out his professor for help:

In terms of classroom support and help, I usually don’t use student services. I usually go to the professors, which [sic] I have classes with because I know they’re teaching the exact same thing that I’m trying to learn. They’re making the test, they’re the ones assessing my understanding of the materials and if I really want to understand something, I prefer to go to the source of it.

In this case, the participant preferred and actively sought out the professor who was teaching the class in which he required additional help with the material instead of going to student tutoring services at the university.

Participant-6 described his mother and a very close family friend as sources of instrumental support during the semester for an English class. He asserted that his professor had no office hours and did not make herself approachable (e.g., verbally or by body language) based on his perceptions of her demeanor. Consequently, he said, “Well, I went to my mom and anything that she could do to help, she did. I had to basically breakdown everything I had gone over in the semester, so she kind of understood what to do to help. She knows I’m a visual, hands-on kind of guy, so if you can break it down that way, I learn instantly.” Participant-6’s mother understood that her son was a visual learner who required smaller chunks of information presented in order for mastery to be achieved.

Informational Support

The analyses of the survey and interview data revealed that all participants perceived informational support that buffered college-related stress and facilitated academic success. In the survey, family members \((n = 9)\) followed by classmates \((n = 8)\) and professors \((n = 8)\) were identified as providing the most informational support. During the interviews, only five participants described instances in which they perceived receiving informational support that helped buffer college-related stress and foster academic success. However, their reports of the sources of informational support only focused on four different sources (i.e., family members, friends, classmates, and professors) out of the ten provided.

For Participant-2, his college advisor was an important source of informational support when he was struggling with time management and assignment deadlines. He explained, “My advisor helped me get it all figured out and planned out. She’s like, ‘You’ve just got to start attacking it and stuff and stop thinking about it.’ I was like, ‘That’s right!’”

Appraisal Support

The analysis of the survey data indicated family members \((n = 7)\), friends \((n = 7)\), and professors \((n = 6)\) were perceived as providing the highest incidences of appraisal support. The analysis of the in-person interview did not yield any significant findings about appraisal support buffering college-related stress and fostering academic success.

Discussion

Study participants indicated that they experienced stress related to college and being a college student. This finding is consistent with the research literature that indicated that college students with ASD often experience high levels of stress related to the decrease in routine and structure associated with the university experience (Glennon, 2001; Misra et al., 2000; VanBergeijk et al., 2008). The findings in this investigation are also consistent with other studies that have reported that students with ASD are academically capable, but have difficulty succeeding in college due to the stressors associated with daily demands of the course vis-à-vis their challenges in planning, organizing, social interactions, and time management (Dillon, 2007; Pugliese & White, 2014; VanBergeijk et al., 2008).

Emotional support was identified as buffering college-related stress and facilitating academic success most frequently by study participants, with family members cited as the primary source. This investigation’s findings related to emotional support are similar to previous studies in that emotional support has been identified as important to the success of college students (Block, 2002; Dennis et al., 2005; Skowron et al., 2004). This study’s finding that family members,
and parents in particular, were an important source of emotional support and consistent with the research of Bryan and Simmons (2009) in which family support was identified as the utmost source of support contributing to academic success. Regarding emotional support from friends, the findings of Friedlander et al. (2007), like the findings of the present study, indicated that social support from friends instead of family members contributed to academic success. Similarly, college students with learning disabilities (Lombardi et al., 2011) revealed that family members and friends were a significant source of social support that helped with academic success and retention.

Instrumental support was identified as buffering college-related stress and facilitating academic success second most frequently by study participants, with professors cited as the primary source. The literature is replete with a variety of types of instrumental support that fosters academic success for postsecondary students with ASD (Ackles, Fields, & Skinner, 2013; Dillon, 2007; Freedman, 2010; Taylor & Colvin, 2013; Wolf et al., 2009; Zager, Alpern, McKeon, Maxam, & Mulvey, 2014).

Informational support was identified as buffering college-related stress and facilitating academic success third most frequently by study participants, with family members cited as the primary source. The types of informational support, such as time management tips and college staff information, provided by family members and college staff were described by other researchers as beneficial (Ackles et al., 2013; Dillon, 2007; Glennon, 2001).

Appraisal support was identified as buffering college-related stress and facilitating academic success least frequently by study participants, with family members and friends cited as the main sources. Overall, study participants perceived they received social support that helped to buffer college-related stress and facilitate academic success and the sources of this support were primarily family members and professors.

**Recommendations for Higher Education Administrators**

To better understand the challenges that students with ASD experience, college administrators would do well to gather data from their respective institutions on these students’ perceptions of the social supports that buffer college-related stress and foster academic success. The College Stress and Social Support Survey ([C4S], 2014) that was administered in this study could be used to inform disability services program evaluation and to guide academic support planning for students with ASD. The findings of the present investigation provide rich information about the types and sources of social support that helped to buffer college-related stress and foster academic success. College administrators would do well to gather similar data at their respective institutions.

College administrators should formally review the purpose and efficacy of the tutorial and advisement centers regarding the services and programming provided to students with ASD with the aim of personalizing those supports to their specific needs. Some of the findings related to instrumental support indicated a lack of access or a lack of effectiveness of the formal student support services, such as the tutoring and advisement center and the access abilities office. Based on the study participants’ interview data, college administrators should focus on the training of college staff and student-tutors on how best to work with students with ASD. Hours of operation for these formal support services should be variable, accommodate student schedules, and provide personal appointments after an initial meeting.

Given the high frequency of professor support, college administrators should develop a long-term, formalized professional development plan for faculty and staff about best practices for instructing and interacting with students with ASD. This recommendation is based on the finding that professors were perceived to be a key source of social support, and they are the individuals with whom students have the most significant academic interactions. University staff and faculty who have expertise with students with ASD and learning differences, such as disabilities office staff and faculty from the education and psychology departments, could provide professional development sessions focused on best practices related to social skill and executive functioning challenges characteristic of an ASD diagnosis. Additionally, college administrators and disability service providers should consult with the office of international students and professors with specific multicultural expertise in the provision of supports and outreach efforts for students with ASD who are also culturally and ethnically diverse.

For professional development related to students with ASD, Universal Design for Learning [UDL] (Meyer, Rose, & Gordon, 2014) principles should
serve as the foundation for how best to teach and engage these students in the classroom. Universal Design for Learning is based on three broad principles: (a) provide multiple means of representation, (b) provide multiple means of action and expression, and (c) provide multiple means of engagement (Meyer et al., 2014). Therefore, faculty who are open to and trained in providing multiple and flexible opportunities for presenting, expressing, and engaging would benefit students with ASD and positively impact their academic success. More specifically, students with ASD can benefit from a UDL strategy of breaking down larger assignments into smaller ones with a timeline of multiple due dates. Similarly, lectures with larger conceptual chunks or multiple concepts should be broken down into smaller, more manageable parts that allow for formative assessments (e.g., quizzes) and review sessions after each concept is presented. Some participants described this “chunking” technique as very beneficial during their interviews. Students with Asperger Syndrome: A Guide for College Personnel (Wolf et al., 2009), Developing College Skills in Students with Autism and Asperger’s Syndrome (Freedman, 2010), and Educating College Students with Autism Spectrum Disorders (Zager et al., 2013) are three beneficial resources for college faculty and staff to review when instructing and working with students with ASD.

College administrators should investigate ways to engage parents of students with ASD in order to share helpful information on how best to work with their young adults in the college environment. This recommendation is based on the findings of this study, which was focused on traditional age (i.e., 18 to 22) students, that family members were a main source of emotional and informational support for students with ASD. College administrators should consider how best to maintain open communication with family members—without the consent of the student, of course—proactively to avoid obstacles related to ASD and reactively when situations arise that require information on how best to communicate, collaborate, and problem-solve with the student. This could involve parents sharing important information about their child’s learning style and social skill challenges and providing relevant resources and strategies. More practically, this parental involvement could be accomplished through weekly emails, parent information sessions with faculty and staff, and written progress updates to parents.

**Limitations**

This study had limitations that involved method, sampling, and the population studied. First, the study was limited by the sample size and composition, which was purposeful and convenient. The recruitment of advanced undergraduate, traditional age students with ASD was from four-year universities in New England. Given this limited geographical range for sampling, the results of this study may not be generalized to other regions or universities in the United States. Also, non-traditional age students or students from diverse cultural and racial backgrounds were not represented in this study. This study was limited by method. The results from a single case study may not provide a basis for generalizing to other persons, organizations, or times. Finally, the limited number of female participants (n = 1) in this study was a limitation because the conclusions primarily focused on the perceptions of male participants with ASD without accounting for any gender differences.

**Future Research**

Researchers should repeat this study at other four-year universities in different geographical regions and with a larger sample. Also, additional research should be conducted with a focus on female advanced undergraduate students with ASD. Since the first 10 viable participants were recruited, the sample for this study included nine male students and only one female student who identified as having ASD. This study should be replicated with a focus on recruiting female students with ASD to compare and contrast with this study’s findings to investigate gender differences in the perception of social support. Similarly, future researchers could also focus on recruiting students with ASD from diverse cultural and racial backgrounds.

Furthermore, researchers should investigate family members’ reports of the social supports that buffer college-related stress and foster academic success for students with ASD. Given that family members were identified in this study as a primary source of social support for students with ASD, it would be wise for other researchers to gather data on family members’ perceptions of the social supports that buffer college-related stress and foster academic success for their family members. Since this study focused on traditional age students with ASD, future research could focus on the needs of non-traditional age students who either go to or return to college at an age beyond 22. For these non-traditional age stu-
students, their spouses/partners, children, or other family members would need to be involved as sources of social support.

Although the findings from this single case study cannot be generalized to the larger population, these findings are significantly meaningful. When the opportunity for agency and voice is provided for these students who have been marginalized throughout their lives, the results are richer and more helpful than could have been predicted if someone else were speaking for them. With that said, future researchers should consider directly engaging students with ASD in the research planning, recruiting, and developing or vetting data collection instruments (e.g., surveys, interview questions, etc.). As colleges accept more and more students with ASD, it is imperative that college administrators provide the programmatic supports and resources necessary to promote college completion for these students, based on the findings and recommendations of this study.

References


Novotney, A. (2014). Students under pressure: College and university counseling centers are examining how best to serve the growing number of students seeking their services. *Monitor on Psychology, 45*(8), 36-41.


About the Author

Robert LeGary, Jr. received his M.A. degree in art history and criticism from Stony Brook University and Ed.D. in educational leadership with a focus in higher education from University of Hartford. His experience includes working as a direct care residential worker and director of residential treatment services in a residential facility for children and adolescents. He is currently Head of School at The Learning Clinic, Inc., a state approved, private special education school for children, adolescents, and young adults with autism spectrum disorder and other learning and behavioral differences. He also is an adjunct professor in the Department of Social and Educational Sciences at Goodwin College. His research interests include supporting students with autism spectrum disorder transition into adulthood and postsecondary education, special education policy and best practices, and social supports for students with disabilities. He can be reached by email at: rlegary@goodwin.edu.
Table 1

**Participants’ Characteristics (N = 10)**

<table>
<thead>
<tr>
<th>Participants</th>
<th>Gender</th>
<th>GPA</th>
<th>Ethnicity</th>
<th>College Year</th>
<th>College State</th>
<th>College Type</th>
<th>Living Arrangement</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>M</td>
<td>3.86</td>
<td>Caucasian</td>
<td>2nd</td>
<td>CT</td>
<td>Public</td>
<td>Home</td>
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<tr>
<td>P2</td>
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<td>4th</td>
<td>VT</td>
<td>Private</td>
<td>College</td>
</tr>
<tr>
<td>P3</td>
<td>M</td>
<td>2.90</td>
<td>Caucasian</td>
<td>4th</td>
<td>VT</td>
<td>Private</td>
<td>College</td>
</tr>
<tr>
<td>P4</td>
<td>M</td>
<td>3.00</td>
<td>Caucasian</td>
<td>3rd</td>
<td>VT</td>
<td>Private</td>
<td>College</td>
</tr>
<tr>
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<td>Caucasian</td>
<td>2nd</td>
<td>MA</td>
<td>Private</td>
<td>College</td>
</tr>
<tr>
<td>P6</td>
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<td>2nd</td>
<td>CT</td>
<td>Public</td>
<td>Home</td>
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<td>MA</td>
<td>Public</td>
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Table 2

**Participants’ Responses to the College Stress and Social Support Survey (2014)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>n</th>
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<th>n</th>
<th>n</th>
<th>n</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>I experience stress from...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Being a college student</td>
<td></td>
<td>3.40</td>
<td>1.56</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Day-to-day performance of course tasks</td>
<td></td>
<td>4.00</td>
<td>1.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Balancing coursework with self-care</td>
<td></td>
<td>4.20</td>
<td>1.72</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
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<tr>
<td>4. Balancing coursework with personal responsibilities</td>
<td></td>
<td>4.30</td>
<td>1.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. Daily Hassles</td>
<td></td>
<td>3.90</td>
<td>1.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

*Note.* A dash indicates that the participants did not provide an example of that source.
Table 3

*Participants’ Reports of the Sources and Types of Social Supports*

<table>
<thead>
<tr>
<th>Source</th>
<th>Emotional Support</th>
<th>Instrumental Support</th>
<th>Informational Support</th>
<th>Appraisal Support</th>
</tr>
</thead>
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<td>Significant Other</td>
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<td>$n = 2$</td>
<td>$n = 2$</td>
<td>$n = 3$</td>
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<tr>
<td>Family Members</td>
<td>$n = 8$</td>
<td>$n = 5$</td>
<td>$n = 9$</td>
<td>$n = 7$</td>
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<tr>
<td>Classmates</td>
<td>$n = 3$</td>
<td>$n = 1$</td>
<td>$n = 8$</td>
<td>$n = 4$</td>
</tr>
<tr>
<td>Roommates</td>
<td>$n = 3$</td>
<td>$n = 1$</td>
<td>$n = 2$</td>
<td>$n = 2$</td>
</tr>
<tr>
<td>Friends</td>
<td>$n = 8$</td>
<td>$n = 3$</td>
<td>$n = 5$</td>
<td>$n = 7$</td>
</tr>
<tr>
<td>Professors</td>
<td>$n = 4$</td>
<td>$n = 7$</td>
<td>$n = 8$</td>
<td>$n = 6$</td>
</tr>
<tr>
<td>College Staff</td>
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<td>$n = 5$</td>
<td>$n = 4$</td>
<td>$n = 3$</td>
</tr>
<tr>
<td>Counselor</td>
<td>$n = 2$</td>
<td>$n = 1$</td>
<td>$n = 1$</td>
<td>$n = 0$</td>
</tr>
<tr>
<td>Co-workers</td>
<td>$n = 3$</td>
<td>$n = 0$</td>
<td>$n = 2$</td>
<td>$n = 3$</td>
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<tr>
<td>Work Supervisor</td>
<td>$n = 2$</td>
<td>$n = 0$</td>
<td>$n = 2$</td>
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</tr>
</tbody>
</table>
Appendix

College Stress and Social Support Survey (C4S)
(Revised 9/14)

Demographics

1. Male or Female (Please circle one)
2. Current Grade Point Average (GPA): ___________
3. Please list college courses attempted and course courses completed (Please use space below):

College Stress (1st Section)

1 = Never  3 = Some of the Time  5 = Almost Always
2 = Almost Never  4 = Most of the Time  6 = Always

Please circle the number that best reflects how often you experience stress as a college student.

I experience stress from...

1. …being a college student. 1 2 3 4 5 6
2. …day-to-day performance of tasks related to my courses (reading, research, homework). 1 2 3 4 5 6
3. …trying to balance my coursework with my self care (laundry, exercise, nutrition). 1 2 3 4 5 6
4. …trying to balance my coursework with my personal responsibilities (job, volunteer). 1 2 3 4 5 6
5. …daily hassles (aggravation related to my finances, work, home life, social demands, time, physical, or emotional health, or future). 1 2 3 4 5 6

Please DO NOT place your name on this the survey.
Social Support (2nd Section)

Please place an “X” in any and all of the boxes that best reflect the types and sources of support that help you be successful in college.

<table>
<thead>
<tr>
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<th>Appraisal Support: feedback, recognition, affirmation</th>
<th>Informational Support: advice, suggestions, helpful information</th>
<th>Instrumental Support: accommodations, study assistance, changing the environment</th>
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College Preparation Program for High School Youth Who Are Blind: The Summer Academy

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Abstract
Students with disabilities have significantly lower graduation rates in four-year postsecondary institutions than students without disabilities. Although there are many barriers associated with persistence and graduation, for students with vision loss, additional accessibility challenges exist. This paper describes a pilot study that examined the impact of a training program designed to enhance functional skills (e.g., white cane use, public transportation use, money management) that may aid in the transition to postsecondary settings. Differences in pre-/posttest results indicate statistically significant gains in functional skills reported by students and their parents, as measured by an experimental scale developed from the curriculum. Using the Snyder et al. (1991) Trait Hope Scale, there was no statistical difference in measured pre-/posttest overall hope scores. Statistically significant relationships were found between hope scores and differences in pre/posttest student functioning, however. Given preliminary findings, this program shows promise for enhancing college readiness among high school students with vision loss.

Keywords: Blind, vision loss, college preparation

There has been an increasing number of students with disabilities who pursue postsecondary education (Wagner, Newman, Cameto, & Levine, 2005). Estimates indicate that about one in 10 students enrolled in four-year institutions are persons with disabilities (Horn & Nevill, 2006; Newman, Wagner, Cameto & Knokey, 2009) and of those who pursue college, their graduation rate is much lower than that of college students without disabilities. For example, Newman and colleagues (2011) reported that graduation rates for students without disabilities in the United States is about 51% yet only 34% for students with disabilities, and even with the increase in enrolled students with disabilities over the past two decades, the graduation rate for students with disabilities over that time has remained constant. In accounting for the disparity of these graduation rates, several reasons have been articulated in the literature including: (a) insufficient academic preparation (Test et al., 2009); (b) lack of understanding of academic accommodations needed to succeed in college (Newman et al., 2009); (c) difficulty coping with higher education demands (Hong, Ivy, Humberto, & Ehrensberger, 2007) as evident in reading/writing, listening comprehension, and organization deficiencies (Reaser, Prevatt, Petcher, & Practor, 2007); (d) poor self-advocacy skills (Brinkerhoff, McGuire, & Shaw, 2002); (e) negative faculty and staff attitudes towards persons with disabilities (Mamiseishvili & Koch, 2010); (f) lack of environmental, financial, psychological, and social support systems (Seidman, 2007); and (g) insufficient programming and services to assist students with disabilities (Tagayuna, Stodden, Chang, Zeleznik, & Whelley, 2005).

Students with Vision Loss
Included in the larger population of students with disabilities attending college are those with vision loss. Within the United States, it is estimated that there are 21 million adults or 9% of the population with varying degrees of vision loss (Centers for Disease Control, 2014) and, of these, about 14% of persons with visual disabilities have attained baccalaureate degrees (National Federation of the Blind, 2015).

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As advances in technology that promote accessibility and independence are available to persons with vision loss, there is an increasing opportunity among persons who are blind or have visual impairments to pursue postsecondary education but they must have necessary accommodations available to them; otherwise, it results in being excluded from educational opportunities (Bell, 2012). For these students, the benefits of having a college degree not only results in obtaining higher salaries (Bell & Mino, 2013) and better employment outcomes (Capella-McDonnell, 2011; Grigal, Hart, & Migliore, 2011) but also provides other positive outcomes including opportunities to make friends, explore avocational interests and participate in community activities (Newman et al., 2011; Wehman, 2013).

In a review of the literature, Giesen and Cavenaugh (2012) concluded that postsecondary transition interventions are efficacious for students with visual impairments when they address career awareness and career development, job seeking skills, and social skills training, involve parents as part of the transition process, and provide direct work experience. When these interventions are introduced in school settings beginning by age 16, they may be particularly effective in postsecondary transition (Crudden, 2012). Although these recommendations may be appropriate for immediate employment strategies, as applied to the successful transition to college, they may have less applicability particularly as they pertain to the first year of matriculation. Cobb and Alwell (2009) in their review of 31 studies on transition planning and coordinating interventions for transition age youth with disabilities identified eight empirically based student-focused studies but only one study by Grenwelge and Zhang (2013) examined a transition intervention specifically for youth planning to attend college. The intervention involved a youth leadership summer training to enhance self-advocacy (knowledge of self and disability rights, communication and leadership skills) for high school juniors and seniors with disabilities. The program consisted of a five-day on-campus program that involved mentoring and classroom activities designed to enhance student self-advocacy and self-determination skills. Results indicated that the summer program enhanced both areas.

Hope

Individuals with higher hope have been found to have better coping skills, better recovery from physical injury, and better overall well-being and adjustment (Snyder, 1995, 2002; Snyder et al., 1991). Previous research has also shown hope predicts successful academic achievement in high school and college students (Snyder et al., 1991). As a construct associated with generalized behavioral persistence, hope has been more recently studied as a promising predictor of persistence (Holder, 2007). Based on Snyder’s conceptualization (Snyder et al., 1991), hope reflects individuals’ “perceptions regarding their capacities to (1) clearly conceptualize goals, (2) develop the specific strategies to reach those goals (pathway thinking), and (3) initiate and sustain the motivation for using those strategies (agency thinking)” (Snyder, Lopez, Shorey, Rand, & Feldman, 2003, p. 122).

Hope has been studied with multiple populations, in various situations, and outcomes associated with better overall well-being and adjustment (Snyder, 1995, 2002). At the same time, the evidence is mixed depending on situational contexts. For example, although hope has been associated with greater likelihood of completing on-line college coursework (Kemp, 2002), it has also been found to have no predictive influence (Holder, 2007).

Although limited research on hope and vision loss exists, a study by Jackson, Taylor, Palmatier, Elliott, and Elliott (1998) investigated the relationship of hope to self-reported functional ability of 63 American veterans with acquired visual impairments entering a rehabilitation program. The study revealed higher hope was not only correlated to higher self-reported abilities, but also "more sociable, proactive coping styles" (p. 182). Because hope is a dispositional construct that can change over time and is amenable with counseling and predictive of goal achievement (Snyder, 1995), it offers promise as a variable worth studying for professional practice. Since hope can be taught and fostered, service providers working with at risk populations such as students with vision loss should consider incorporating interventions to promote hope as part of their programs.

Given this review, the purpose of this study was to investigate the impact of a three-week on-campus training program specifically designed for high school students who are blind or have vision loss and considering attending college. The basic goal of the program is to improve participant functional skills
needed to successfully apply and graduate from college. To analyze the major questions of interest, we used descriptive statistics to address the first question, paired samples t-tests as it pertained to the second and third questions and a Pearson product-moment correlation to address the last research question which are stated accordingly:

1. What specific functional skill changes are reported by students and their parents over the course of the training program?
2. Do student perceptions of functional competence and parent perceptions of their child’s functional competence change over the course of the training program?
3. Do student hope scores change over the course of the training program?
4. How are hope and self-perceptions of functionality related to one another?

Method

Summer Academy Program

The designed training program is intended for high school students with blindness or visual loss to enhance independent living skills that facilitate transition to postsecondary education. Sponsored by the Pennsylvania Bureau of Blindness and Visual Services (BBVS) through the partnership between the state Office of Vocational Rehabilitation (OVR), Bureau of Special Education Training and Technical Assistance Network, and The Pennsylvania State University, the training curriculum includes daily living activities such as orientation and mobility, self-advocacy and networking, career/vocational planning, social interaction, and technology skills (a full description of the curriculum is available upon request).

High school students throughout the state applied and then screened by their vocational rehabilitation counselors before being accepted into the program. Once accepted, students and parents received an orientation packet that explained program schedule, policy and procedures, and logistics. The program lasted three weeks where students lived on-campus throughout the duration of the program and, on occasion, participated in local recreational and social outings. Each student was also assigned an individual peer mentor (residential assistant) who was also pre-screened before acceptance into the program. Peer mentors were students from various academic majors from local universities who, prior to their appointment as a peer mentor, completed a one-week training program on their roles and responsibilities.

The campus program included a variety of classroom and community-based activities. Students learned about on/off campus travel and how to access the local bus system, strategies to enhance orientation and mobility (e.g., cane use, global positioning systems), money management (use of an automated teller machine, maintaining a bank account), access to university learning platform systems (e.g., Angel, Canvas), classroom technology (e.g., Kurzweill scanning software, iPad, and Victor systems), career exploration (i.e., career inventories), residence living (e.g., food preparation, cooking, nutrition, cleaning, labeling, laundry, self-defense), and effective classroom practices (e.g., note-taking, hiring readers). As part of this program, students received information related to the “Voc Act Now” curriculum which is an interactive program designed to enhance postsecondary transition by learning about reasonable accommodations and skills needed in postsecondary education settings (e.g., gaining access to an office for disability services, how to ask for a classroom accommodation).

Students also attended two class sessions as part of the regular summer course schedule to audit college level classes and participate in class discussions. This activity provided students with some sense for what a “real college classroom experience” may be like. Students chose course lectures from a selection of 10 courses from various academic disciplines. During weekends and weekdays, they participated in recreational and social activities that include a team-building program involving a high-ropes course as well as attended other social activities such as swimming, dancing, listening to music, visiting state parks, and/or attending a movie. Finally, students also participated in social work sessions that allowed them to discuss any concerns or issues they wanted to address with staff and other participants. These experiences, in combination, were intended to provide students with a clear understanding of what college life may be like so that if they intended to apply and attend college, they may have developed experiences that could help with the transition from high school to college.

Participants

High school students with visual impairments or blindness registered with the Pennsylvania Office of Vocational Rehabilitation (OVR) were recruited to
participate in the Summer Academy Program. Approximately six months prior to participation, students and their parents were sent a letter explaining the purpose and requirements of the study. Participation in the study was voluntary and had no impact on admission to the program. Each participant received an individualized identity code known only to the primary investigators. After completion of the program (last day), students completed the same outcome measure as the pretest. A similar posttest outcome measure was forwarded via mail to the parent or legal guardian of the student approximately four weeks later. This time period was used in order to provide sufficient time for the parent to observe any changes as a result of the program, if perceived. If there was no immediate response from the parent, a follow-up mailing was conducted two weeks later. No further contact was made after this subsequent effort.

The student sample consisted of 23 students who had various degrees of vision loss and two students reporting total blindness. About half (48%) also reported having a secondary disability (e.g., asthma, attention deficit disorder, bipolar disorder, diabetes, hearing impairment, multiple sclerosis). Functionally, about one-third of students used Braille and/or a cane. In terms of other assistive technology, the majority (92%) of students used one or more other kinds of assistive technology including GPS devices, magnifiers, optical character recognition readers, scanners, and smart phones. As it pertains to software and hardware applications, 60% of students reported using one or more of those specifically to assist with reading text (BrailleNote, Digital reader/talking book player JAWS [screen reader], Google Maps, Open Book [allows printed documents or graphics into an electronic text format using optical character recognition technology], Zoom Text [screen magnifier/reader software]) as well as technology designed for general use (iPad, iPod, iPhone).

Demographically, the average age of students was 17.6 years old, ranging from 15.11 to 19.30 years old. In terms of ethnicity/race, 68% were White, 16% African American, 12% Hispanic and 4% multiracial. Distribution across grade levels was fairly consistent with 32% of students enrolled in the 12th grade, 28% in the 11th grade, 24% in the 10th grade and 8% in the 9th grade.

### Assessments and Measures

In order to evaluate the impact of the Summer Academy, two outcome measures were used. The first measure was an experimental scale directly tied to the curriculum; the second measure was an established scale, the Trait Hope Scale (Snyder et al., 1991). Pre-test measures for students were completed by paper format and sent to their home address. Given the possibility of needing assistance in order to complete the pretest, a question was asked as to whether the student required assistance completing the surveys and, if so, who assisted them. Data indicated that one-third of students completed pretest measures independently, one-third required assistance from a parent or legal guardian, and the remaining third by “other” (e.g., teacher, rehabilitation counselor). It should be noted that we conducted a comparison of means as a function of who completed the scale and, at pretest administration, found no statistical differences in total score. Posttest measures were completed on-line independently (i.e., by each student) on the last day of the training program. Parent forms at both pretest and posttest administrations were completed through a mail survey, and included only the experimental functional assessment survey since we were also interested in parent perception of perceived changes in their child’s functional assessment.

**Functional assessment.** An experimental scale was developed by the investigators and instructors who taught in the Summer Academy. Each instructor who was associated with one of the six domains described in next section was asked to construct a list of behavioral outcome statements. Working collectively, there was an initial pool of 68 items but after subsequent reviews, this list was reduced to 24 items. Items were eliminated primarily because of redundancy or not being directly tied to the curriculum that focused on one of the six domains: (a) assistive technology, (b) activities of daily living, (c) career planning, (d) orientation and mobility, (e) recreation and (f) social interaction and stress management. Because we were interested in perceptual changes reported by students as well as their parents, parallel forms of the functional assessment were developed. For example, a question on the student form asked, “I know how to use a washer and dryer to do laundry” whereas the parent form asked, “I believe that my child knows how to use a washer and dryer to do laundry.” For each question, the respondent was asked to evaluate the level of agreement (ranging from 1 = “Strongly Agree” to 5 =
“Strongly Disagree”). Internal consistency estimates at pretest indicated levels considered “good” based on psychometric interpretation described by George and Mallery (2003) for both child (Cronbach estimate $p = .79$) and parent forms (Cronbach estimate $p = .88$).

**Trait Hope Scale.** This scale is a measure of a person’s general or characteristic level of hope for persons 15 years or older. When administered, the scale is referred to as The Future Scale so as not to sensitize respondents to the fact that hope is being measured, thus inadvertently impacting responses. The self-report scale developed by Snyder et al. (1991) consists of 12 items that is divided into two subscales, each with four items: *Agency* which reflects goal-directed (motivation) energy to achieve goals whereas *Pathways* refers to one’s plans or routes needed to accomplish goals. There are also four items considered as “filler items.” Each item is scored between an eight-point scale ranging from “1=definitely false” to “8=definitely true” with higher scores indicative of higher hope. An example of an item is: “There are lots of ways around any problem.” Although the scale has two subscales, for the purpose of this study, we were interested in overall hope (total) score. In the current study, the observed internal consistency reliability estimate was .89 indicating “good” reliability (George & Mallery, 2003). This estimate in our study was actually somewhat higher than reported overall reliability estimates that have ranged between .74 to .88 for the Trait Hope Scale (Snyder, Lehman, Kluck & Monsson, 2006).

**Results**

**Perceptions of Functional Competence**

As noted in Table 1 that lists specific aspects of functionality, student perception of pretest functioning of activities of daily living and related skills indicated that, in general, students believed that they demonstrate an ability or have knowledge to do almost all of the 24 task statements described (i.e., items where respondents indicated either “agree” or “strongly agree”). Noted exceptions (means greater than 2.5) were knowing how to use an Automated Teller Machine to get money from a bank account ($M = 4.56$), knowing how to use an Automated Teller Machine to get money from a bank account ($M = 4.56$), knowing how to ask and apply for disability-related accommodations needed at college or at work ($M = 3.92$), and asking correct information from a public bus driver ($M = 3.84$).

With respect to posttest assessments of functionality, student perceptions were consistently rated at the highest level of agreement regarding one’s capability or knowledge in performing a specific task. The lowest rated level of agreement had to do with knowing how to use a “Pen Friend” to label personal items ($M = 4.50$), knowing what disability-related accommodations needed for work ($M = 3.92$), and asking correct information from a public bus driver ($M = 3.84$).

Two paired-samples t-tests were used to determine whether there was a difference in perceived functionality as reported by students and their parents. Prior to conducting the paired t-tests, data were inspected for outliers and normal distribution assumptions. An inspection of box plots was conducted and all values were retained in the analysis (i.e., none detected more than 1.5 box-lengths from the edge of the box in both boxplots). The assumption of normality was not violated, as assessed by Shapiro-Wilk’s test for students ($p = .31$) and parents ($p = .87$) data groups. As a result, no normality violations were assumed when conduc-
ing the paired samples t-tests. Results indicated that student perception of functionality increased, on average by 21.44 points (lower scores indicate higher levels of perceived functionality), 95% CI [14.91, 27.97] (see Table 4). Participation in the Summer Academy resulted in a statistically significant increase compared to pretest assessment, *t*(15) = 6.99, *p* < .001, *d* = 1.75. Similarly, parent perception of functionality indicated a mean difference of 28.21 points, 95% CI [20.70, 35.73] which also resulted in a statistically significant increase (lower scores indicate higher levels of perceived functionality), as compared to pretest assessment, *t*(13) = 8.11, *p* < .001, *d* = 2.16. As noted in effect size estimates (*d*), results from both groups were considered “large” using Cohen’s (1988) guidelines.

With regard to the third research question pertaining to whether changes in self-reported hope scores occurred, prior to conducting the paired t-test, we first examined the data for outliers and two were detected that were more than 1.5 box-lengths from the edge of the box in the boxplot and, as expected, the assumption regarding the normality of the distribution was also violated (Shapiro-Wilk, *p* = .001; data significantly deviated from a normal distribution). After verifying that outliers did not occur because of data entry error, we decided to run the paired t-test under two conditions, one that included the two outliers and one where they were removed (see Table 4). When including the two outliers, results indicated that there was no statistical difference between pretest and posttest administrations of hope. When excluding these outliers, results indicated that change scores on the Trait Hope Scale resulted in a statistically significant increase with a mean difference of 2.30 points, 95% CI [4.54, .06], *t*(16) = -2.16, *p* = .05, *d* = .53 (moderate effect). In terms of hope scores, it is important to note that student’s mean scores at both pretest (*M* = 53.48, *SD* = 6.20) and posttest (*M* = 53.58, *SD* = 11.33) assessments were considered high given maximum value of 64 points (see Table 3). With respect to high hope scores in our sample, the overall average score at each administration was almost identical; students perceived high levels of hope prior to and immediately following the program intervention.

When examining the last research question regarding the relationship between hope and student perception of functionality, a statistically significant relationship indicative of a medium effect was found between pretest hope scores and pretest perception of student functioning, *r*(25) = -.44, *p* = .03. Posttest hope scores and the difference between pretest and posttest scores pertaining to student perception of functionality also revealed a statistically significant relationship indicative of a large effect *r*(19) = .50, *p* = .03 Thus, hope scores shared a moderate to large level of variance with pretest perception of student functioning and overall changes in perceived functionality.

In sum, descriptive and inferential analysis concludes that both students and parents perceived an increase of functional skill attainment; for students, the difference between pretest and posttest administrations seemed more pronounced. As applied to hope scores, there was no change over the course of the Summer Academy as initial high hope scores persisted throughout the training program. If one were to exclude two outliers, however, a difference between administrations was observed. Finally, it also appears that changes in perceived functionality reported by students is associated with higher hope scores and initial pretest hope scores correlate with student perceived functioning.

**Discussion**

Students with vision loss reported at pretest levels that they "agreed" or "strongly agree" with their ability to function on almost all of the 24 tasks, which was much higher than parental perceptions of students’ abilities. By the time at posttest, however, parental perception of their children’s functionality increased to nearly the same level as that reported by their children. Given the importance of how parental perceptions influence a child’s decision whether to pursue college (e.g., Nauert, 2015), it would seem that interventions that enhance perceptual functioning in the areas addressed in the Summer Academy (i.e., assistive technology, activities of daily living, career planning, orientation and mobility, recreation and social interaction and stress management) could be an important influence in having more high school students with disabilities pursue postsecondary education. Although we did not directly assess if perceptual changes in parent beliefs regarding their children’s capacity to apply, pursue and graduate from college occurred before and after the intervention, there is some interesting anecdotal evidence. A follow-up contact completed almost one-year post intervention indicates that of the eight high school seniors
who completed the program, each of these students applied, were admitted and are currently enrolled in college. We will continue to monitor whether other students in earlier grades apply, attend and, if relevant, persist in college.

Understanding perceived functioning from both student and parental perspectives is important in identifying areas where students may feel less competent in skills needed to progress after high school and onto college. Although research studies are limited, there are indications that, as it pertains to youth with visual impairments, successful postsecondary transition has been linked to having competent independent living skills, accessible transportation and related travel skills and effective social skills (Capella-McDonnall, 2011; Cmar, 2015). Regarding research and students with any type of disability, not limited to just visual, Getzel (2008) reported specific factors offered by colleges that support students with disabilities including self-management skills, exposure to technology, and exposure to career experiences. A review of transition best practices, conducted by Landmark, Ju and Zhang (2010) identified strategies including career planning, social skills preparation, and daily living skills training. It should be noted that all of the factors identified above are addressed in the Summer Academy.

In terms of the relationship between hope and functionality, findings from the current study support the positive relationship found in the earlier investigation by Jackson et al. (1998). As it pertains to disability-related aspects needed to succeed in college (i.e., activities of daily living, assistive technology and orientation and mobility) as well as generic aspects for any college student (i.e., career planning, social interaction and stress management), it seems that hope has a positive influence in perceived competence. Since hope can be taught and given its relationship to perceptions of functional competence that contribute to academic achievement, intervention programs may want to consider how this aspect could be infused in a curriculum. Following earlier suggestions by Snyder (2002), program staff could use agency (motivation) techniques such as examining goals important to the individual and pathway (route) techniques of sub-goals that are necessary to achieve them. Understanding the role of hope at different stages of an individual’s life is important in understanding hope for individuals with significant life challenges (e.g., persons with disabilities; Coduti & Schoen, 2014).

One unintended finding from this study was that students with varying degrees of vision loss had higher hope scores when compared to that found among the general population of young adults. For example, mean scores among college and non-college students was 49 (Snyder, 2002) and 48, respectively (Snyder, 1995). When thinking about students with vision loss and the goals that they must set and achieve in order to function in a visual world on a day-to-day basis, perhaps elevated scores found at both pretest and sustained through posttest administrations should not be thought of as being that unusual. Earlier commentary by McDermott and Snyder (1999) noted, "Hope is not dependent upon constant success, but rather the experience of some success" (pp. 15-16). Knowing that students with vision loss set and achieve goals based on functional challenges that most persons without visual disabilities cannot appreciate, it may be that having experiences of successfully overcoming obstacles contributes to one’s overall perception of hope. As participants in this study already had high hope perceptions, changes as a result of the intervention did not contribute to enhancing these perceptions. Further, changing hope perceptions may not occur unless there are learning activities such as the agency and pathway suggestions noted by McDermott and Snyder that are introduced in the training curriculum. At the same time, however, we noted that when two outliers from the data set were eliminated, there was a statistically significant increase of moderate effect. Thus, the extent to which hope may be enhanced in a program designed to enhance functionality pertaining to prepare postsecondary success is unclear without replication and including additional student samples.

**Implications for Further Research**

Future research comparing this program to other college preparatory programs for students with vision loss, such as those by National Federation of the Blind ([NFB]; 2015) is needed. Comparing different programs with similar training rubrics and using the same outcome measures will allow us to identify best practices that other educational and state vocational rehabilitation programs may consider in promoting postsecondary outcomes for students with vision loss. Such comparisons will require collaboration so that generalizability can be evaluated. Without a more focused effort that compares multiple interventions, it is difficult to create research-driven interventions that may impact college application, participation, grad-
uation and ultimately employment of persons with vision loss.

Assessment of hope in relation to successful outcomes also needs to be studied further, particularly with students who have vision loss. Hope, as part of rehabilitation practice, offers promise as an important variable as it relates to goal setting and goal achievement (Coduti & Schoen, 2014). Further study of persons with various disabilities is needed to explore in what situations and demographic cohorts are hope perceptions similar or different. Given the varying nature of daily challenges of achieving and navigating goals that persons with various disabilities experience, further studies are needed to better understand the clinical aspects of having different levels of hope and how they impact related rehabilitation outcomes. This work would also allow for the development of cohort norms as a function of disability.

Finally, although this study focused on changes on functionality and hope perceptions, in term of behavioral criteria, longitudinal study is needed to determine whether students actually applied, gained admittance and pursued postsecondary education. As noted earlier, anecdotal evidence indicated that all eight seniors in the Summer Academy were currently enrolled in college. What is not known is to what extent, if any, did the program change one’s perception about pursuing college. Further studies should explore this aspect as ultimately it serves as an important behavioral outcome indicator of program success.

Limitations

Students who participated in this study were a convenience sample that was prescreened by the state vocational rehabilitation program team and, as a result, these students may have already been highly motivated from onset. As a quasi-experimental design (no randomization or control group), while we cannot make any inference regarding cause-effect relationships (i.e., changes were due to the program), to some extent, the internal validity limitation concern is mitigated by using multiple observations from two groups. Still, even with rather robust effect sizes that were found in pretest-posttest differences, we must be cautious as to whether findings generalize to other high school students with vision loss.

Another limitation of the study is that we relied on using self-report measures and, as a result, whether perceived change manifests in behavioral change can be questioned. While acknowledging this problem, as noted earlier, this study used an external validation by soliciting parental input. Also, the manner in which pretest student data was collected, for some students, may have compromised results as there were instances where they required the assistance of a parent, teacher or some other person to help them complete pre-test measures (since they were distributed by mail survey). Although there were no statistical differences at pretest on these measures as a function of whether the student or some other person recorded their answers on the pretest, we did not have sufficient statistical power to evaluate differences at pretest, which may have influenced their responses. For example, student scores may have been inflated at pretest administration based on apprehension of not wanting to seem incompetent or unskilled in certain areas in front of another person.

Six students also dropped out and/or did not complete the final posttest due to leaving the program early (e.g., required earlier transportation on last day when posttest evaluation occurred). When student posttest data were collected on the final day of the program, some students reported being tired and overwhelmed and were eagerly awaiting the graduation ceremony that was scheduled later in the day. Students may have completed the posttest survey in a rushed manner thus not paying sufficient attention to questions being asked or given time to thoroughly reflect on how they perceived their functioning on tasks now that the program had ended. In addition, despite attempts to reach parents, over half did not complete the posttest evaluation and therefore findings may not accurately reflect parent perceptions who had a child in the program.

Finally, given that there were no standardized outcome instruments that we could identify that addressed functional aspects that we were interested in studying and the decision to develop an outcome measure tied to the curriculum, it was necessary to develop an experimental scale of functionality. Although internal consistency estimates for both student and parent forms at pretest administration were acceptable, in terms of validity and the factor structure of the scale, additional research is needed. Continuing research in scale development that could be used in comparative studies would help establish the use of a standardized instrument.
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Wendy Coduti received her M.S. degree in labor relations human resource management and Ph.D. in rehabilitation counselor education, both from Michigan State University. Her experience includes working as a vocational counselor, human resource analyst in the field of workers’ compensation, and director of clinical management for a brain injury rehabilitation program. Currently Wendy is an assistant professor at The Pennsylvania State University in the Department of Educational Psychology, Counseling, and Special Education. Her research interests include disability management, mental health in the workplace and postsecondary students with disabilities. She can be reached by email at: wac16@psu.edu.

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Table 1

Descriptive Statistics of Functionality Items at Pretest/Posttest Reported by Students

<table>
<thead>
<tr>
<th>Functionality Test Item</th>
<th>Pretest Mean</th>
<th>Pretest SD</th>
<th>Posttest Mean</th>
<th>Posttest SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use washer and dryer to do laundry</td>
<td>2.44</td>
<td>1.41</td>
<td>1.26</td>
<td>0.45</td>
</tr>
<tr>
<td>Ask for correct information using public bus</td>
<td>3.44</td>
<td>2.06</td>
<td>1.05</td>
<td>0.22</td>
</tr>
<tr>
<td>Use stress management techniques</td>
<td>2.28</td>
<td>1.20</td>
<td>1.47</td>
<td>0.69</td>
</tr>
<tr>
<td>Aware of disability-related school/work accommodations</td>
<td>2.44</td>
<td>1.38</td>
<td>1.31</td>
<td>0.58</td>
</tr>
<tr>
<td>Comfortable interacting with people</td>
<td>1.64</td>
<td>0.75</td>
<td>1.26</td>
<td>0.56</td>
</tr>
<tr>
<td>Use assistive technology in all aspects of life</td>
<td>2.52</td>
<td>1.55</td>
<td>1.63</td>
<td>0.68</td>
</tr>
<tr>
<td>Use correct canes/tips for mobility</td>
<td>2.88</td>
<td>1.66</td>
<td>1.78</td>
<td>0.91</td>
</tr>
<tr>
<td>Use ATM machine to get money from account</td>
<td>4.52</td>
<td>1.66</td>
<td>1.84</td>
<td>0.96</td>
</tr>
<tr>
<td>Identify signs of un/healthy relationships</td>
<td>1.92</td>
<td>0.86</td>
<td>1.47</td>
<td>0.51</td>
</tr>
<tr>
<td>Use websites to explore career interests</td>
<td>1.72</td>
<td>0.93</td>
<td>1.36</td>
<td>0.59</td>
</tr>
<tr>
<td>Be a good listener</td>
<td>1.76</td>
<td>0.72</td>
<td>1.57</td>
<td>0.60</td>
</tr>
<tr>
<td>Know how and where to get technical support for needs</td>
<td>1.88</td>
<td>0.66</td>
<td>1.57</td>
<td>0.60</td>
</tr>
<tr>
<td>Use different orientation aids such as large print, GPS</td>
<td>2.56</td>
<td>1.30</td>
<td>1.36</td>
<td>0.42</td>
</tr>
<tr>
<td>Comfort asking for assistance from others</td>
<td>2.32</td>
<td>1.46</td>
<td>1.52</td>
<td>0.96</td>
</tr>
<tr>
<td>Know how to ask/apply for disability accommodation</td>
<td>3.36</td>
<td>1.62</td>
<td>1.63</td>
<td>0.83</td>
</tr>
<tr>
<td>Know enjoyable ways to spend leisure time</td>
<td>1.36</td>
<td>0.48</td>
<td>1.10</td>
<td>0.31</td>
</tr>
<tr>
<td>Know what traffic cues to use to cross streets safely</td>
<td>1.92</td>
<td>0.95</td>
<td>1.26</td>
<td>0.45</td>
</tr>
<tr>
<td>Know how to use “pen friend” for labeling items</td>
<td>4.08</td>
<td>1.77</td>
<td>2.27</td>
<td>1.17</td>
</tr>
<tr>
<td>Know what kind of work want to do after graduation</td>
<td>2.28</td>
<td>0.84</td>
<td>1.42</td>
<td>0.60</td>
</tr>
<tr>
<td>Know how to submit class assignment using email</td>
<td>1.48</td>
<td>1.08</td>
<td>1.47</td>
<td>0.84</td>
</tr>
<tr>
<td>Use stovetop safely to cook meal</td>
<td>2.44</td>
<td>1.66</td>
<td>1.42</td>
<td>0.60</td>
</tr>
<tr>
<td>Identify stress management</td>
<td>2.28</td>
<td>0.97</td>
<td>1.47</td>
<td>0.51</td>
</tr>
<tr>
<td>People consider me a “team player”</td>
<td>1.54</td>
<td>0.72</td>
<td>1.31</td>
<td>0.47</td>
</tr>
<tr>
<td>Use magnifier and/or screen reader to read text</td>
<td>2.32</td>
<td>1.81</td>
<td>1.31</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Table 2

Descriptive Statistics of Functionality Items at Pretest/Posttest Reported by Parents

<table>
<thead>
<tr>
<th>Functionality Test Item</th>
<th>Pretest Mean</th>
<th>Pretest SD</th>
<th>Posttest Mean</th>
<th>Posttest SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use washer and dryer to do laundry</td>
<td>2.96</td>
<td>1.56</td>
<td>1.26</td>
<td>0.45</td>
</tr>
<tr>
<td>Ask for correct information using public bus</td>
<td>3.84</td>
<td>1.95</td>
<td>1.05</td>
<td>0.22</td>
</tr>
<tr>
<td>Use stress management techniques</td>
<td>2.80</td>
<td>1.29</td>
<td>1.47</td>
<td>0.69</td>
</tr>
<tr>
<td>Aware of disability-related school/work accommodations</td>
<td>3.92</td>
<td>1.82</td>
<td>1.31</td>
<td>0.58</td>
</tr>
<tr>
<td>Comfortable interacting with people</td>
<td>1.88</td>
<td>1.09</td>
<td>1.26</td>
<td>0.56</td>
</tr>
<tr>
<td>Use assistive technology in all aspects of life</td>
<td>2.36</td>
<td>1.63</td>
<td>1.63</td>
<td>0.68</td>
</tr>
<tr>
<td>Use correct canes/tips for mobility</td>
<td>3.80</td>
<td>1.98</td>
<td>1.78</td>
<td>0.91</td>
</tr>
<tr>
<td>Use ATM machine to get money from account</td>
<td>4.45</td>
<td>1.82</td>
<td>1.84</td>
<td>0.60</td>
</tr>
<tr>
<td>Identify signs of un/healthy relationships</td>
<td>2.56</td>
<td>1.26</td>
<td>1.47</td>
<td>0.51</td>
</tr>
<tr>
<td>Use websites to explore career interests</td>
<td>2.70</td>
<td>1.60</td>
<td>1.36</td>
<td>0.59</td>
</tr>
<tr>
<td>Be a good listener</td>
<td>1.96</td>
<td>1.20</td>
<td>1.57</td>
<td>0.60</td>
</tr>
<tr>
<td>Know how and where to get technical support for needs</td>
<td>3.16</td>
<td>1.71</td>
<td>1.57</td>
<td>0.60</td>
</tr>
<tr>
<td>Use different orientation aids such as large print, GPS</td>
<td>3.64</td>
<td>1.84</td>
<td>1.36</td>
<td>0.42</td>
</tr>
<tr>
<td>Comfort asking for assistance from others</td>
<td>2.56</td>
<td>1.44</td>
<td>1.52</td>
<td>0.96</td>
</tr>
<tr>
<td>Know how to ask/apply for disability accommodation</td>
<td>4.50</td>
<td>1.93</td>
<td>1.63</td>
<td>0.83</td>
</tr>
<tr>
<td>Know enjoyable ways to spend leisure time</td>
<td>2.08</td>
<td>1.11</td>
<td>1.10</td>
<td>0.31</td>
</tr>
<tr>
<td>Know what traffic cues to use to cross streets safely</td>
<td>2.80</td>
<td>1.35</td>
<td>1.26</td>
<td>0.45</td>
</tr>
<tr>
<td>Know how to use “pen friend” for labeling items</td>
<td>4.56</td>
<td>1.70</td>
<td>2.27</td>
<td>1.17</td>
</tr>
<tr>
<td>Know what kind of work want to do after graduation</td>
<td>3.68</td>
<td>1.51</td>
<td>1.42</td>
<td>0.60</td>
</tr>
<tr>
<td>Know how to submit class assignment using email</td>
<td>1.52</td>
<td>1.19</td>
<td>1.47</td>
<td>0.84</td>
</tr>
<tr>
<td>Use stovetop safely to cook meal</td>
<td>3.00</td>
<td>1.95</td>
<td>1.42</td>
<td>0.60</td>
</tr>
<tr>
<td>Identify stress management</td>
<td>3.00</td>
<td>1.29</td>
<td>1.47</td>
<td>0.51</td>
</tr>
<tr>
<td>People consider me a “team player”</td>
<td>1.84</td>
<td>1.06</td>
<td>1.31</td>
<td>0.47</td>
</tr>
<tr>
<td>Use magnifier and/or screen reader to read text</td>
<td>3.44</td>
<td>1.91</td>
<td>1.31</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Table 3

Descriptive Statistics of Outcome Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Pretest Functioning</td>
<td>25</td>
<td>40.00</td>
<td>84.00</td>
<td>57.36</td>
<td>13.10</td>
</tr>
<tr>
<td>Parent Pretest Functioning</td>
<td>25</td>
<td>34.00</td>
<td>115.00</td>
<td>72.44</td>
<td>19.91</td>
</tr>
<tr>
<td>Student Posttest Functioning</td>
<td>19</td>
<td>24.00</td>
<td>47.00</td>
<td>35.11</td>
<td>6.39</td>
</tr>
<tr>
<td>Parent Posttest Functioning</td>
<td>14</td>
<td>28.00</td>
<td>56.00</td>
<td>43.86</td>
<td>10.72</td>
</tr>
<tr>
<td>Student Pretest Hope</td>
<td>25</td>
<td>41.00</td>
<td>64.00</td>
<td>53.48</td>
<td>6.20</td>
</tr>
<tr>
<td>Parent Pretest Hope</td>
<td>19</td>
<td>10.00</td>
<td>64.00</td>
<td>53.58</td>
<td>11.33</td>
</tr>
</tbody>
</table>

Table 4

Paired t-tests of Differences (Pretest - Posttest) Among Outcome Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>95% CI</th>
<th>Paired Differences</th>
<th>Mean</th>
<th>SD</th>
<th>Lower</th>
<th>Upper</th>
<th>t</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Function</td>
<td></td>
<td>Pretest/Posttest</td>
<td>21.44</td>
<td>12.25</td>
<td>14.91</td>
<td>27.97</td>
<td>6.99</td>
<td>15</td>
<td>.005</td>
</tr>
<tr>
<td>Parent Function</td>
<td></td>
<td>Pretest/Posttest</td>
<td>28.21</td>
<td>13.02</td>
<td>20.70</td>
<td>35.73</td>
<td>8.11</td>
<td>13</td>
<td>.000</td>
</tr>
<tr>
<td>Student Pretest/Posttest</td>
<td>-2.29</td>
<td>-4.54</td>
<td>-0.05</td>
<td>-2.17</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td>.046</td>
</tr>
<tr>
<td>Outliers Removed</td>
<td></td>
<td>Student Pretest/Posttest Hope</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outliers Retained</td>
<td>-.84</td>
<td>-6.12</td>
<td>4.44</td>
<td>-.34</td>
<td></td>
<td></td>
<td></td>
<td>18</td>
<td>.741</td>
</tr>
</tbody>
</table>

Note. CI = Confidence interval.
“The Most Defining Experience:” Undergraduate University Students’ Experiences Mentoring Students with Intellectual and Developmental Disabilities

Susan M. Ryan
Jeanne M. Nauheimer
Cassandra L. George
E. Bryan Dague

Abstract
In this three-year qualitative study we investigated the experiences and perspectives of university undergraduate students who were peer mentors for students with intellectual and developmental disabilities (ID/DD) in a postsecondary education certificate program at a public university in the northeastern United States. The findings were categorized into three major themes: (a) the roles of these peer mentors; (b) the benefits and challenges related to peer mentoring; and (c) the transformative effect of peer mentoring on these undergraduate students. Findings provide insights into postsecondary education for students with ID/DD and suggest implications for (a) parents of students with ID/DD, (b) transition from high school, and (c) administrators at institutions of higher education.

Keywords: Postsecondary education, intellectual and developmental disabilities, peer mentorship, institutions of higher education, disability support services

Over forty years have passed since the passage of Public Law 94-142, the Education for All Handicapped Children Act of 1975 ([EHA], 1975). Prior to PL 94-142, some children and youth with intellectual and developmental disabilities (ID/DD) did not attend school and stayed at home, others were educated in segregated special education schools and classrooms with other students who were identified as having ID/DD, and still others were relegated to state-operated or private residential (disability-only) institutions across America (U.S. Department of Education [USDOE], 2010). With the passage of PL 94-142 and its subsequent reauthorizations, including the Individuals with Disability Education Improvement Act ([IDEIA], 2004), public schools in the United States were required to provide free appropriate public education (FAPE) as well as transition services to all students with a disability including if desired, transition services to institutes of higher education.

In addition to the IDEIA (2004) other federal legislation enacted to enhance access and supports to students with disabilities in American education included Section 504 of the Vocational Rehabilitation Act of 1973 (PL 93-112) and the American with Disabilities Amendments Act (ADAAA) of 2008. These pieces of legislation have implications for institutes of higher education as postsecondary options for students with ID/DD begin to take hold across the nation. For example, Section 504 of the Vocational Rehabilitation Act of 1973 prohibits discrimination against individuals with disabilities in programs and services that receive federal funds. The majority of educational entities, including institutes of higher education, receive federal funds and therefore must comply with these regulations.

The ADAAA reinforces and extends the requirements of Section 504 to public programs including higher education, whether they are federally funded or not. The ADAAA requires colleges to provide accommodations including auxiliary aids and services to ensure that students with disabilities have equal access to all educational opportunities (Duffy

1 University of Vermont
The ADAAA provides access, equal opportunity, and nondiscrimination; it does not ensure student success (Duffy & Gugerty, 2005). The Disability Services and Access Offices, located at institutes of higher education, are charged with carrying out the intent of both Section 504 and the ADAAA on their campuses. These offices provide the services that support access, equal opportunity, and nondiscrimination and are often considered to assist students with disabilities to be academically successful.

Inclusion at the college and university levels was facilitated by the federal legislation described above, as well as lessons learned through implementing inclusion at the high school level. Public high schools across the country have facilitated the academic and social inclusion for students with disabilities including students with ID/DD for decades through the use of paraprofessionals and same-age peers (Carter, Cushing, & Kennedy, 2009; Causton-Theoharis & Malmgren, 2005; Downing, Ryndak, & Clark, 2000; Doyle, 2008; Giangreco, Suter, & Doyle, 2010).

Contributions of peers, in supporting the education and inclusion of students with ID/DD in public schools, indicate that peer support provides a focus on educational goals related to communication including: (a) modeling social skills and reinforcing communication attempts (Weiner, 2005); (b) social interactions, such as initiating conversations, making introductions, and discussing shared interests (Hunt, Soto, Maier, & Doering, 2003); (c) classroom participation through sharing materials and teaching self-management (Gilberts, Agran, Hughes, & Wehmeyer, 2001); and (d) academic collaboration, such as completing assignments together, reviewing work, and explaining key concepts (Carter, Sisco, Melekoglu, & Kurkowski, 2007). Since the 1980s, students with ID/DD have graduated from high schools with their peers (Getzel & Wehman, 2005; Grigal & Hart, 2010; Wehman, 2013).

Researchers and other proponents of inclusive education have focused on the benefits of using peer mentors in public schools to support students with ID/DD. With transition to institutions of higher education and postsecondary education programs, research related to the benefits and challenges to university peer mentors supporting the educational, social, and employment needs of students with ID/DD is warranted. In an effort to fill a gap in this research, we sought the perspectives of undergraduate university students who were peer mentors for students with ID/DD. In the current qualitative study we examined the experiences and perspectives of university undergraduate mentors as they supported a small number of students with ID/DD enrolled at a public university in the northeastern United States.

**Method**

**Research Design**

This descriptive, qualitative study relied on semi-structured interviews, reflective logs, observations, document analysis, and focus group member check interviews to explore the experiences and perspectives of university undergraduate students who served as peer mentors for students with intellectual and developmental disabilities enrolled in a postsecondary education program (PSE).

**Participants**

The participants were 18 university undergraduate students, three male and 15 female, who served as peer mentors for students with ID/DD in a postsecondary education program during a three-year academic period from 2012 to 2015. The age range of the mentors was 19–22 with a mean age of 20. Participants represented 15 majors, including general and special education, communication sciences, philosophy, social work, neurosciences, English, psychology, biology, Russian, global studies, and mathematics. Mentors on average worked approximately 7.5 hours per week for 30 weeks a year. The mean length of time the mentor functioned in his/her role was 2.5 years. Mentors worked 2,389.75 total hours per semester for 15 weeks. See Table 1 for peer mentor demographic information (e.g., age, gender, academic standing, major). Each mentor underwent a vetting process before serving as a mentor. The vetting process included a formal interview, reference checks, and a criminal background check that was processed through the state’s Department of Public Safety as well as the Criminal Information Center. These background check included conviction records, out of state conviction records and FBI records.

The mentees, who were the students with ID/DD, included four males and 10 females ranging in age from 19 to 30. Mentees had disabilities including autism spectrum disorders, intellectual and cognitive disabilities, and Down syndrome. Table 2 provides basic mentee demographic information.
Setting
The participants were all undergraduate students enrolled at a public university in the northeastern United States. The university undergraduate population is approximately 10,000, the graduate population approximately 1,500. The full- and part-time faculty number approximately 1,500. The university’s land grant mission includes a dedication to the global community, social justice, and a strong commitment to an academic and ethics code of conduct.

Postsecondary Education Certificate Program
All mentees were students enrolled in a postsecondary program from 2012 to 2015. During the term of this study, the postsecondary program was funded by the US Department of Education, Office of Postsecondary Education, through a grant entitled, Transition Program for Students with Intellectual Disabilities ([TPSID]; USDOE, 2010). Major components of the certificate program included that all students (a) had intellectual or developmental disabilities; (b) were nonmatriculated continuing education students enrolled in one of the university’s undergraduate certificate programs; (c) enrolled in and completed 9 to 18 for-credit, undergraduate courses (fully included in the university courses) based upon their career goals identified through a person-centered planning process; and (d) completed a graded internship targeted at obtaining gainful competitive employment upon completion of the certificate program. The mentee completion rate for the program was 100%. The graduation rate for undergraduates serving as mentors, at this point in the project, is 100%. It is within this program context that the undergraduate students fulfilled their roles as peer mentors for the university students with ID/DD (Ryan, 2014).

Data Collection
Data collection included (a) semi-structured interviews, (b) peer mentor notes and reflective logs, (c) documents such as peer mentoring manuals and guidelines, and (d) focus group member check debriefing sessions. The initial interview guide contained open-ended questions such as: (a) describe your role (as a mentor), (b) tell me about the benefits or challenges you experienced within your role as a peer mentor, and (c) describe a typical day. The second or subsequent set of interviews conducted with small focus group of mentors contained the same set of questions, reviews of emerging themes, and questions concerning changes since the previous interview. Interviews were conducted at the university in a quiet office or conference room setting. Interviewees chose the time of the interviews. Interviews lasted 30 to 45 minutes and were audiotaped for later verbatim transcription and coding analysis. Participants who were interviewed more than once during the three years of the study are indicated with an asterisk in Table 1. Pseudonyms are used throughout this article to ensure confidentiality of all participants.

The study also included 20 hours of observation conducted by the lead author. Observations initially focused on the role of the mentor in the academic classroom. Other variables became part of the observation (e.g., interactions between mentor and mentee; activities occurring during free time). During observation in the academic classroom intrusion was minimized. In all cases, the researcher sat quietly in the back of the room and recorded field notes on a laptop computer with no student interaction.

The authors collected and analyzed documents such as peer mentors’ log entries in reflective journals, program newsletters, and other mentor correspondences including entries in Facebook (private page). This article draws from all these data sources but relies most heavily on data collected through the interviews. Over three years we completed 18 interviews with participants, resulting in 1,100 pages of typed, double-spaced interview transcriptions and other documents such as mentor notes and reflections.

Data Analysis
The university institutional review board approved this research. Pseudonyms were used during data collection and analyses to protect confidentiality. All interviews were audiotaped, transcribed verbatim, and then analyzed by the lead author. Transcripts were imported into a qualitative text-sorting program, HyperRESEARCH 3.5.2 (Researchware, Inc., 2013). The lead author established credibility of the data analysis and familiarity with the data by (a) conducting all 18 interviews, (b) listening to all the interview tapes, and (c) reading and rereading all the interview transcripts. Categorical coding was used to analyze the data inductively (Bogdan & Biklen, 2007; Miles, Huberman, & Saldana, 2014). First, each transcript was hand-coded/marked by hand using 161 initial codes (e.g., mentor roles, mentor challenges, mentor benefits, mentor experiences) using words, phrases, or terms descriptive of the text content. Particularly
descriptive passages were highlighted and notes were maintained in a theme notebook related to emerging themes. The interviews were then reread and recategorized or combined into codes (e.g., friendship, frustration with faculty or parents, navigator, difficult situations, transformational experiences). HyperRESEARCH 3.5.2 (Researchware, Inc., 2013) was used to sort the data into 15 code-specific reports. Inductive analysis was applied to the code-specific reports to assist in the identification of themes that overlapped code categories. All interviewees received copies of their interviews and were asked to review them to confirm their intended meaning was communicated accurately. Member checks were conducted with 80% of the interviewees to review content of the interviews, confirm emerging themes, and check the authenticity and credibility of the emerging themes.

Findings

The overarching findings of this study revealed the following: (a) unique roles and responsibilities entailed in being a peer mentor for a student with ID/DD at the university; (b) benefits and challenges of peer mentorship; and (c) the transformational effect mentoring had on the participants (e.g., the undergraduate students without disabilities).

Roles and Responsibilities

Participants described their various roles and responsibilities as peer mentors. Mentors consistently said that there was no typical mentee or typical day. Rather, mentors described students with ID/DD as being unique individuals. Mentors also shared that there was nothing set in stone about being a mentor; each day brought something new and they liked that about being a peer mentor. In fact, participants described their roles as being responsive to each student within each situation. Nonetheless, three consistent roles and responsibilities that emerged as themes throughout the interviews were those of boundary setter, friend facilitator, and academic tutor.

Boundary setter. Mentors talked about the need for them, as mentors, to help set boundaries, particularly in the area of physical touching and physical/personal space:

I’ve been working on establishing boundaries with two mentees. Trying to set boundaries between my role as a professional mentor and tutor and between the friendship role and peer role. For example, Gary really likes to give hugs, and sometimes it is appropriate to do so, and other times I have to say that there have to be limitations to physical contact with him and you know, simple polite verbal reminders of that really work. And also... he might ask me [inappropriate] questions about my personal life that are a little bit irrelevant to what we’re doing, and I’ll um, remind him, “That’s okay that you asked, but, you know, that’s not necessary [for me] to give you that information,” and just reminders like that, so establishing boundaries and I think getting that practice with me is good.

Back when Lilly was a student, that was my biggest struggle with boundaries because Lilly doesn’t connect very strongly with other people, on that like a friend level, and she and I had a really strong connection and I was really torn between like, encouraging those feelings for other people, and establishing boundaries, because she would put her hands in my hair, constantly hugging and squeezing, and I knew that it was her way of expressing her feelings for me and that we had that bond, but I needed to let her know when it was appropriate and when it was too much. And I think by the end (of her program) she got it.

Other mentors spoke about the need to help students understand, or obtain experience with setting boundaries about what is acceptable to do on campus and what is not. For example, one mentor shared that she tries to help Kelly learn “what is appropriate to do when on campus and what isn’t.” When she is in a university class, this mentor tries to help Kelly understand that “checking shopping websites is not appropriate.”

Friend facilitator. Mentors spoke about issues related to friendship:

There are boundaries that need to be set between...like friendship and work, but I feel like that varies between students so I—like as far as my relationship with Sandy, we have that friendship and can also be professional and she knows when
to turn it on and off whereas a student like Mike doesn’t necessarily understand the boundaries, so you need to reinforce them stronger, or, there’s also the student like Gary who’s sort of here to make friends and understand what friendship is on campus, and is really using us as not only supports in his internships but as gateways into this whole world of collegiate friendship; he has no idea how that even looks, and so in that sense, you really have to be more of a friend, and I feel like the boundaries are definitely more fluid and based on student-to-student, so it’s not like you go into it like a set, rigid, I guess, structure.

Some participants interviewed spoke about the issue of developing genuine friendships with students with ID/DD as a result of being a mentor:

I tend to be on the conservative side when it comes to communication and like work versus personal life, I think, because of the Facebook and social media I’ve backed off a little bit from um, from connecting that way, and I do it partially because of like concerns for like the students. I just think it [developing friendships with mentees] is a very, very sensitive subject.

Academic tutor. All mentors interviewed talked about how they filled the role of an academic tutor in varied ways. Sometimes that came in the form of note taking as described in the interview excerpt below:

A lot of times students need help with note taking so sometimes we’ll both take notes and go over them afterwards. Or a student will listen and I’ll take notes and talk about it afterwards. Sometimes they just need help with remembering when to focus on things and pay attention and not be doing things that aren’t appropriate to do in class. Like using phones and stuff like that.

Another student, Bill, reflected on his role as an academic support person in the following way:

I think that an academic mentor is a large part of what I do, I think helping the students understand their obligations and time restraints, scheduling in terms of their academics is one facet of the mentor job.

Sometimes being an academic mentor comes with challenges:

Being an academic tutor is difficult within a class because you can’t step outside and have a conversation with the student to break down what the assignment is or break down the group work or break down the partner work. So it is a lot more fragile, I think, than one-on-one you can get in an outside environment. A lot of it is prompting. You know: “Don’t you think you should take your iPad out and record this lecture or take notes?” Or “What do you think you should do now?” You don’t know their understanding of the assignment or activity. So, a lot of it is just posing the questions to them and seeing how they respond.

Sometimes it was difficult being an academic tutor outside of one’s subject area as the following mentor described:

Sometimes students are taking classes that you don’t know anything about, like I know when Sandy is taking a film class and the readings are so difficult and she’ll ask me to explain a sentence and I have no idea what it’s talking about. How can I help be a tutor when I don’t understand it?

One mentor shared that her role as an academic support changed naturally throughout the course of the semester as the student’s confidence was built:

I tried to be there to kind of give them some comfort in the beginning, but now they don’t really need that comfort because they’re totally used to everything, but I just try to be as much in the background as possible.

Another mentor talked about her role in the academic class as interpreting what the instructor’s assignment meant. Eileen explained:

Tracy is just struggling a lot this year with her academic work. I think at first I was always just taking their word for it, and sometimes their interpretation of what the professor wants is completely different or they’re missing key requirements or formatting issues or things like that. So my role is like looking over things and getting a good idea of what is expected. With Tracy we normally read
through her articles or readings she needs to do. And what is really helpful (for Tracy) is going through each paragraph by paragraph and switching who reads what paragraph and summarizing after each paragraph to see if she’s comprehending, if she’s understanding. I think sometimes she just tries to push through and just pretend. So I try to reword the instructor’s prompt in a more readable format or more easy to understand format if the students are having difficulty with understanding it.

Benefits and Challenges

It was clear through the interviews that participants perceived their experiences as both beneficial and challenging.

Benefits. The benefits of being a mentor include: (a) gaining personal skills such as patience, compassion, or perspective; (b) receiving internship/work experience beneficial to their chosen career; and (c) seeing how the mentorship benefited the students with ID/DD themselves.

It made me a better person. One mentor described how she gained patience as a result of working with one student with autism spectrum disorders: "I learned a lot about having patience and understanding other people’s challenges that I may not face. Another thing is just seeing them succeed, it’s awesome."

Mentors also describe being a mentor as the most defining experience of my time at the university. For example, one mentor shared:

Mentoring taught me to be strong and patient when encountering obstacles, and also that life is too wonderful to waste our time getting hung up on our mistakes and insecurities. During my most difficult semesters here, the postsecondary education program was a source of support and comfort.

It was a resume builder. Several mentors were undergraduate students in special education, general education, or social work. These students shared how being a peer mentor was something they considered to be an experience that would help them in their future careers:

Initially I did it kind of as a resume builder…. But the greatest benefit that I had from being a mentor is just, being in so many situations that I never expected and being able to work through them, it’s awesome; and being able to collaborate with peers. I find that the mentor meeting is really essential to development because I’m just hearing all these [other mentors] have ideas and all these problems that people have and how they’ve dealt with it. I’ve just learned so much. And I think I’m going to gain a lot professionally from it, not just from the resume but also in my workplace in the future.

It was gratifying. One peer mentor reflected on how seeing the success of a student with an ID/DD was gratifying:

One of the first times I worked with June, she got a paper back that she got a B+ on and she was just flying high the whole day. She told everyone that we saw. Other times when like Bev has thanked me so much for helping her and she’s really thankful of all the mentors’ . . . um . . . support with her schoolwork and just hearing that from the students is super gratifying.

Another mentor, Ann, shared:

Barb’s presentation in the participatory action research course was yesterday and she was so proud of her entire project. How she was able to do it without a partner and get it all done. She was very proud of herself. It was wonderful.

There were several mentors who worked the entire three years of this study and therefore were able to speak to the long-term program benefits for students with ID/DD. One such mentor, Bill, was able to witness the growth and success of students with ID/DD over time. He shared one of his most meaningful experiences:
I think seeing the students grow independence. I think a lot of the times we set goals for the students based on what they come in asking to accomplish in their 3 years. And seeing even the smallest goals, like transporting themselves around campus, cleaning out their inboxes, communicating effectively and appropriately with different statuses in society...just the little things that I think a lot of the times their first year you don’t expect them to make those milestones. Seeing where they are at right now and then seeing the progression over two or three years is very, very rewarding. And seeing how you can impact their success is a very rewarding experience.

Leah reflected on hearing a parent describe the benefits of her role as a peer mentor to their adult son with a disability:

I actually met his mom, we had an open house a few months ago and I met his mom and she just went on and on about how he used to hate school, he never wanted to go, and now he just can’t wait to be at school with everyone and that he just like loves it, and she wanted to thank us just so much for everything that we do, like, “you guys don’t know how much of a difference you’ve made.” Just hearing that, oh my God, I started tearing up. It was like so gratifying just knowing that I’m making that much of a difference in someone’s life. It’s something I take for granted just like going to school. It means so much to them and that’s just great!

Challenges. Four major categories of challenges emerged from the interviews. These included challenges related to the (a) students with ID/DD themselves; (b) parents of students with ID/DD; (c) other undergraduate students or the university instructor/faculty; and (d) systems, including the university and the sending high school.

The students themselves. Mentors experienced challenges related to the students themselves whether that was a student being in a bad mood, not wanting to take responsibility for a homework assignment, or making unhealthy food choices. One mentor shared:

Sometimes some of the students come in with a bad mood, or they’re tired, or they just don’t want to do their work. They don’t want to study right now. So, it is tricky, it is tricky to redirect them and to kind of cheer them up and get them focused. It’s hard.

Another mentor shared her frustration with a situation where a student with ID/DD refused to do homework: “I just remember her flat out saying: “I’m not going to do it. I’m not doing the reading.”” The mentor went on to explain that she told the student it was her assignment and her responsibility and the student still refused to work:

I just remember being so shocked and you can’t come into a mentor shift knowing what’s going to happen, you really have to think on your toes. And I’m really growing in that way. And I remember saying how important it was and expressing you’re a college student, this is important. This is your homework, this is your class...she wasn’t hearing it. She just kept on saying, “No, I’m not doing it.” And I remember just being so defeated.

Other mentors, like Emma, explained that there were things that the students with ID/DD did that were embarrassing. She shared:

The way she interacts with certain people is really embarrassing for me. Even though it was nothing to do with me, I’m still a presence there, and not being able to be a role that’s (feels) like “You can’t do that.” We were on the third floor of the student center and it was in between classes and a professor was in a wheelchair and rolled up and was talking to another student and Barb puts her hands on his knees and goes into his face and says “It looks like you’re having a hard time, can I assist you?” and I was standing right there and he got really angry and was really offended and Barb started crying. And it was this huge thing and it was really hard to know how to tell her, you know, teaching the nuances of social interactions like “It’s good to be helpful, it’s bad to be helpful here, and good here.” Those rules are very complicated. But just having to get over being embarrassed sometimes, which is hard for anyone, when you’re in your 20s it’s, it’s embarrassing, everything. So, it was really challenging.
sponded by telling him that we were just friends and that questions like that made me uncomfortable so I would appreciate if he stopped asking them.”

Several mentors spoke about the challenges they had with facilitating authentic friendships or facilitating friendships in general between students with ID/DD and other nondisabled students: “She was very pushy with wanting to become friends with people, almost to the stalker point. But this semester she’s much better about establishing a relationship first.”

Mentors also spoke about their concerns for the eating habits or weight challenges of the students with ID/DD:

It’s really hard for me to see some of the students trying to control their eating. I don’t think she understands that just because she had a really healthy lunch she can’t go out and have a huge Ben and Jerry’s ice cream.

**The parents.** Mentors spoke about the challenges they faced with the parents of the students they mentored. Comments ranged from issues related to homework, to having unrealistic expectations, to being overprotective, to reliving their youth through their 20-year-old daughter.

For example, Melissa shared: “There’s been instances where it’s been fairly obvious that a parent has helped with Tracy’s homework. In fact, I asked Tracy, and she said her mother helped her, well, I mean wrote it for her.” Ann, another one of Tracy’s mentors echoed that theme: “Yeah, like we have one of the parents doing the student’s homework. That’s not cool.”

A few mentors talked about other inappropriate or unconventional behaviors depicted by some of the parents. Some acted like "helicopter" mothers, and others wanting too personal relationships with the mentors, talking about boyfriends, clothing, and weekend plans.

**The other undergraduate nondisabled students and university faculty instructors.** The mentors talked about how some undergraduate students talk down to the students with ID/DD as the following quote reveals:

"I think the hardest challenge is seeing that [matriculated students] have that difficulty really adequately communicating with the mentees and seeing that they kind of need to treat them in a different light. I just see how they interact, especially in Kelly’s hip-hop class, the students without disabilities interact is totally—not totally different but somewhat different—than how some of them interact with her. And, I’m not saying all of them; some of them are great and amazing. But there are those few who just, you know, lower their voice or change their tone and I would go as far as saying that I really do think some of the students see that. To see that they turn and talk with their friends and then turn and talk with [our students] and really change how they interact. So I think that is challenging for me to see and I can imagine it can be challenging for our students to see.

Another student spoke about how other students in the class treated one of the students with ID/DD:

In one student’s public speaking class, they were taking a quiz, and it was a group quiz so they were able to work with other students. And I remember that the other students in her group were not wanting her input.

Several mentors talked about the role, beneficial or detrimental, that UVM faculty/instructors played in the academic life of a student with ID/DD: “[One professor] just sort of said ‘Why is Mike in my class? He doesn’t belong here.’ The mentor went on to say that she felt as if she had to demonstrate to the instructor why the student was in his class.

Another mentor talked about the role they played in connecting the instructor to the student:

That’s the hardest thing to do because I think in a lot of ways, some students or teachers will look towards you to answer the questions or they’ll talk to you as opposed to talking to the student and that’s a huge problem because that’s not what it is, that’s not why we are there. We aren’t there to kind of interpret what the teacher is saying and give it back to the student that we’re mentoring. We aren’t the kind of mirror in between the two. It’s awkward to be there and kind of have to define your role to someone else.

Another mentor talked about having to redirect the instructor to address his/her concerns directly to the student with ID/DD:
It becomes kind of this tricky position of trying to direct the teacher back to the student’s response, you know like, “let’s see what the student thinks,” or “so what do you think of this?” Kind of prompting the teacher to go back to the student so I feel like as mentors we can I feel like it’s kind of like a role where you’re the facilitator between both the student and the professor, to make sure the connection is useful for both parties.

There were times, the mentors shared, that instructors were too lenient with the students with ID/DD. For example, Bill shared:

I can think of two instances where one [instructor] has been extremely lenient and one has been giving way too much time for assignments or way too many redos and way too much facilitation, and others where they’re not sympathetic to their learning needs at all. And those situations are very difficult to, I guess, to mentor because in the first instance where the teacher was much too lenient, I ended up creating my own little deadlines for the student. So sometimes you have to step in and put your own expectations on it. But there are, in terms of the teacher not giving them enough time, or enough attention for what they need in the classroom, that’s something I think you have to turn to the university as opposed to making the instances yourself because those times kind of require the Disability Support Service office or they require the teacher/program manager meetings.

The “systems.” As much as there were challenges with the students themselves, the parents, the other nondisabled undergraduate students or faculty, there were also what seemed at times significant or insurmountable challenges with systems. For example, one particularly perceptive mentor seemed to suggest that the sending public high school did not adequately prepare students with ID/DD for the real world after high school, saying, “I don’t understand how high school grading occurred because at least one of my mentees just assumed they would get a good grade even if they did not do the homework.”

Mentors also weighed in on the challenge that the certificate program the students with ID/DD were completing only gave the students nonmatriculated status. This did not allow students to receive specific benefits, such as the ability to live on campus, extended participation in nonacademic activities, and the ability to walk at the university’s Commencement ceremony. One mentor reflected:

I think one challenge is the amount of time the students are on campus because as much as I have friends in my classes, but I don’t necessarily hang out with them outside of classes. I think that’s a hard jump to make because everyone who lives on campus has his or her own base of friends. And the students with disabilities are here for only part of the day. So, if they want to hang out with someone they have to initiate it most likely. Which is hard for anyone to do, especially with past experience in high school and a lot of bullying experiences that our students have. I didn’t understand at first, but the students with ID/DD do not formally graduate, I mean they don’t get to walk on the stage. How sad is that for them and their families.

Transformational Nature of the Peer Mentorship Experience

Undergraduate students shared how the experience of being a peer mentor for students with ID/DD at their university caused them to be more collaborative. Some of the undergraduate student mentors spoke about how the experience of being a mentor made them more compassionate, more considerate of others, better students, and happier. One student expressed: “It helped me be a better student. I thought if students with intellectual disabilities could work so hard and accomplish so much, so could I!” Another mentor stated:

Being a mentor has taught me a lot about life skills, interpersonal skills, and navigating campus. It has made me more compassionate, taught acceptance and understanding. It has given me the most diverse group of friends I’ve ever had. Also it has helped me to realize something important about myself and my interests and my ambitions.

The interviews revealed that some mentors changed their majors as a result of their experience as a mentor for a student with an ID/DD. In addition to changing majors, mentors spoke about how their experience had made them change their minds about their chosen careers. One explained:

The interviews revealed that some mentors changed their majors as a result of their experience as a mentor for a student with an ID/DD. In addition to changing majors, mentors spoke about how their experience had made them change their minds about their chosen careers. One explained:
I didn’t like my major. I hadn’t really gotten my feet on the ground. I was excited about being a mentor. Six semesters later this stands out as one of the best decisions I have made for myself as a college student. I realized that studying psychology and linguistics probably wasn’t the path for me. I changed my major because I decided that I would like to spend the rest of my life working with folks with disabilities.

A small number of undergraduates at this university who served as mentors for students with ID/DD shared that they would have quit college if it were not for their experience of being a mentor:

My first year I did not know about the postsecondary education program or really any clubs or communities where I would fit in. With only two friends and after a year of not finding that niche I was ready to leave, ready to quit. It was not about the academics. I just never felt like I had a place. When I applied [to be a mentor] I wasn’t convinced that I would fit in a seemingly education-related role as I was a neuroscience major. Two years later, I am still part of this mentorship program that kept me from accepting my transfer offers from other institutions. It hasn’t just affected me by helping me choose to stay at this university. I now have a special education minor and am doing my senior thesis on how disability affects learning processes in the brain and how modifying educational practices can stimulate learning in affected students.

Another student explained:

Three years ago, I decided after a miserable first year of college to give this university one more chance. I didn’t like my major, I hadn’t really gotten my feet on the ground and I didn’t have a community. The only thing drawing me back to my sophomore year was this mentorship job. Otherwise, I would have quit.

Discussion

As reported in the findings section, data analysis revealed three themes that represented the mentors’ experiences in supporting the needs of university students with ID/DD. These themes included: (a) mentors functioned in a variety of roles including boundary setter, academic tutor, and friend; (b) mentors revealed the benefits they received and challenges they encountered; and (c) mentors described how being a mentor was transformational. The recurring themes emphasize the benefit and the transformative effect mentorships had for undergraduate students. The themes also suggest implications for public schools, institutes of higher education, and further research.

The effect that the mentorship experience had on the participants in this study was significant, transforming, and career altering. The sense of satisfaction that they gained from being a part of the academic and social successes of students with ID/DD was noteworthy. Our findings are consistent with the work of Penner (2001); mentorship was an experience that fostered concern for “the other”. Being of service to another seemed to provide an enhancing experience for the undergraduate mentors. The mentorship experience resulted in undergraduate students thinking of others and developing an altruistic mindset. One extraordinary finding was that the mentors returned year after year to serve in their role. It was clear that they had found their work to be meaningful and rewarding. Other researchers (Ferrari, 2004; McLean, 2004) report that being a peer mentor can result in positively influencing career choices, their persistence in higher education, and achieving their goals in higher education. The mentors in this current study confirm the results reported in other research students that did not deal with mentorship of students with ID/DD. It would appear that the benefits of mentorship are consistent across various types of mentorship revealing that giving of oneself in service to another is a valuable experience for undergraduates.

In addition to the impact on undergraduate students serving as peer mentors, this study revealed implications for transition from public schools as well as IHEs. PL 94-142 and its amendments require a great deal from public school special education administrators and educators. Through the eyes of the mentors who were interviewed, public schools had failed to foster high expectations, independence, trust and age appropriate social interaction skills. Holding students with disabilities accountable was something the mentors suggested should happen in high school. Ensuring that students with ID/DD complete public school possessing skills such as the ability to work independently, come to class on time and prepared, respect personal boundaries, and submit homework
that represents their work were critical for success in this postsecondary education program according to mentors. In many cases participants in this study wondered if students with ID/DD were given a “free pass” and not held to high expectations by their sending high schools and parents.

Institutes of higher education have standards that include holding college students accountable. This study revealed that students with ID/DD, in some cases, were not held to the same expectations as their nondisabled peers and that they should be. Holding students with ID/DD to high standards was also something that not all students’ parents did. Our study suggests that there is work to be done in this area by public school administrators, educators, and parents working together in order to ensure the success of students with ID/DD in postsecondary education settings.

The role of the parent or parents was a complicated one in this postsecondary education program, according to the mentors interviewed for this study. The concept of helicopter parents is not limited to students with ID/DD. In fact, college administrators, as well as student support service personnel, address the role of parents in higher education. Annually, IHEs address these issues with the incoming freshman class. Issues related to appropriate college academic and social behavior, ownership of homework, high expectations, and building independence away from home are all subjects addressed through orientation, student services, and college advising. We suggest the issue of academic integrity and efficacy of students’ work is a concern that is relevant and applicable to university students of any cognitive ability. In addition to the standard IHE orientation, students with ID/DD would also benefit from the array of supports to students with disabilities provided by IHEs including, but not limited to, student support services, instructional and technology supports, and disability support services. Linking students to disability support services ensures that students receive reasonable accommodations and other supports that will increase college success.

Many IHEs have social justice mission statements. Institutes of higher education also have academic programs where undergraduate students’ future careers will include providing health, education, and social work to people with ID/DD. In other words, children, youth, and adults with ID/DD will be undergraduate students’ colleagues or clients in the future. Therefore, IHEs might consider how their institutions are preparing the next generation to support the needs of our citizens with ID/DD. College and university departments, including schools of nursing, business, medicine, education engineering would benefit from involvement with postsecondary education programs for students with ID/DD. In addition to having their undergraduate students serve as mentors, undergraduate students from various IHE departments may gain experience through involvement in internship or field based experiences in these postsecondary education programs.

Finally, IHEs are facing decreased student recruitment, enrollment, and retention. Some undergraduate students serving as peer mentors interviewed for this study revealed that they would have “quit college” if it were not for their involvement in, and benefit from, being a peer mentor. As IHEs are identifying strategies and focusing resources on increasing recruitment and retention of undergraduate students, they might consider the role that being a peer mentor plays in both the recruitment of incoming freshmen, and the retention of upperclassmen. Undergraduate students interviewed in this study shared that they experienced an increased sense of self-confidence, developed a network of friends, and found a degree program as a result of being a peer mentor. Without these experiences they shared they would not have stayed at the university. The findings from this study shed light on how IHEs might facilitate a sense of community and belonging that may result in increased retention of undergraduate students through implementation of mentorship programs similar to the one described in this article.

Postsecondary education programs for students with ID/DD have experienced a dramatic increase in the last decade due to the passage of the Higher Education Act and the federal funding of the TPSID projects (National Council on Disability, 2011). The findings in this study are applicable beyond TPSID programs and suggest to public school administrators, educators and parents: (a) to set high expectations and hold all students including students with ID/DD accountable, (b) to teach basic socially appropriate behavior such as boundary setting, (c) to build independence, and (d) to link students and faculty to IHE supports such as the disability service offices.
Limitations of Study

The findings are limited in four ways. First, the findings represent the perspectives of only 18 undergraduate peer mentors who attended one specific university in the northeastern United States. Investigating the perspective of other mentors at other university postsecondary education programs might have provided richer data. Second, the participants in this study were mentors in a federally-funded TPSID program. Although the findings from this study are limited to a TPSID project, we believe that the results have implications for other postsecondary education programs. Third, interviews were based on three years of data collected by the lead author. The data represented the perspectives the mentors felt free to share with the lead author. Participants may have been unwilling to share all their most intimate concerns or challenges. A participatory action research approach might yield other valuable data. Fourth, this article focused on the perspective of the mentors themselves and did not compare those perspectives or experiences to those of the students with ID/DD themselves. We decided to focus on the university mentor because we felt that perspective had not been captured by previous research and that the perspective may have important implications for the inclusion of students with ID/DD in institutes of higher education.

Implications for Future Research

There are several potential research questions for future investigations. First, how do mentors contribute to the success of students with ID/DD in higher education? Second, how do university administrators view the involvement of undergraduate students in mentorship programs for students with ID/DD? Can these mentorships be avenues in which undergraduate students find a sense of belonging and meaning in their lives? Third, might peer mentorship serve as a recruitment or retention strategy for IHEs? Institutes of higher education might discover that mentorship experiences are a valuable experience in being of service to others. Fourth, how might university mentors help facilitate the transition of high school students with ID/DD into IHEs? Too often, older adult agency assistants serve as assistants for young adults with ID/DD making inclusion a challenge because of the age difference between the assistant and other potential peers of students with ID/DD. Finally, in what ways does the role of the IHE disability support services benefit students with ID/DD? How have these DS departments evolved since the passage of the Higher Education Opportunities Act of 2008 (HEOA) (PL 110-315) and the increase in IHE access for students with ID/DD across IHEs?

Conclusion

The experiences and perspectives shared by the undergraduate peer mentors in this study are valuable because there have been few other studies to date conducted on peer mentors’ perspectives. The experiences of these peer mentors can inform work in public schools and IHEs to support students with ID/DD in colleges and universities across the United States through the use of undergraduate peer mentors. That data from this study suggests undergraduate students consider being a mentor for a student with intellectual and developmental disabilities one of the most meaningful experiences they have during their time at this university. The opportunities that lie ahead are to: (a) develop successful secondary special education transition programs for students with ID/DD to IHEs, that include the provision of peer mentors; (b) understand the implications of peer mentoring as a potential powerful recruitment and retention strategy for IHEs, (c) support high school special education educators and parents of young adults with ID/DD to set high expectations for children, youth, and adults with ID/DD; and (d) strengthen and utilize IHE disability support services offices in the inclusion of students with ID/DD in colleges and universities.

References


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Acknowledgement

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Table 1

*Peer Mentor Demographics*

<table>
<thead>
<tr>
<th>First Name</th>
<th>Age</th>
<th>Sex</th>
<th>College Level</th>
<th>Major</th>
<th>Average Hours (Weekly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill</td>
<td>19</td>
<td>M</td>
<td>Junior</td>
<td>Secondary Ed., Concentration in English</td>
<td>7</td>
</tr>
<tr>
<td>Carol</td>
<td>18</td>
<td>F</td>
<td>Junior</td>
<td>Linguistics: Communication Sciences and Disorders</td>
<td>7</td>
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<tr>
<td>Emma</td>
<td>20</td>
<td>F</td>
<td>Junior</td>
<td>Elementary Education, Concentration in Nutrition and Food Sciences,</td>
<td>7</td>
</tr>
<tr>
<td>Grace</td>
<td>21</td>
<td>F</td>
<td>Junior</td>
<td>Social Work, Spanish Minor</td>
<td>7</td>
</tr>
<tr>
<td>Ann(^a)</td>
<td>19</td>
<td>F</td>
<td>Sophomore</td>
<td>Philosophy &amp; Psychology, or Social Work</td>
<td>7</td>
</tr>
<tr>
<td>Amber</td>
<td>19</td>
<td>F</td>
<td>Sophomore</td>
<td>Midlevel Education</td>
<td>7</td>
</tr>
<tr>
<td>Sarah</td>
<td>19</td>
<td>F</td>
<td>Sophomore</td>
<td>Elementary Ed., Special Ed. Minor</td>
<td>7</td>
</tr>
<tr>
<td>Mary</td>
<td>21</td>
<td>F</td>
<td>Junior</td>
<td>Secondary Education, Philosophy</td>
<td>7</td>
</tr>
<tr>
<td>Margret</td>
<td>20</td>
<td>F</td>
<td>Junior</td>
<td>English, Studio Art Minor</td>
<td>7</td>
</tr>
<tr>
<td>Mandy</td>
<td>19</td>
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<td>Sophomore</td>
<td>Elementary Ed.: Special Ed.</td>
<td>6</td>
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<tr>
<td>Leah</td>
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<td>F</td>
<td>Junior</td>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>Melissa(^a)</td>
<td>19</td>
<td>F</td>
<td>Junior</td>
<td>Biology, Spanish</td>
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</tr>
<tr>
<td>Kathleen</td>
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<td>F</td>
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<td>Elementary Ed.</td>
<td>5.25</td>
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<tr>
<td>Andrea</td>
<td>19</td>
<td>F</td>
<td>Sophomore</td>
<td>Secondary Ed: Special Ed.</td>
<td>6</td>
</tr>
<tr>
<td>Eileen</td>
<td>19</td>
<td>F</td>
<td>Sophomore</td>
<td>Neuroscience: Special Ed.</td>
<td>7.5</td>
</tr>
<tr>
<td>Rob</td>
<td>19</td>
<td>M</td>
<td>Senior</td>
<td>Mathematics, Secondary Education</td>
<td>9</td>
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<tr>
<td>Karly</td>
<td>20</td>
<td>F</td>
<td>Senior</td>
<td>Wellness &amp; Alternative Medicine</td>
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</tr>
<tr>
<td>Liam</td>
<td>19</td>
<td>M</td>
<td>Sophomore</td>
<td>Secondary Ed., Concentration in English</td>
<td>7.5</td>
</tr>
</tbody>
</table>

*Note.* College level refers to year of interview. \(^a\) Mentors who were interviewed more than once.
### Table 2

**Mentee Demographics**

<table>
<thead>
<tr>
<th>Name</th>
<th>Disability</th>
<th>Age</th>
<th>Sexual Identity</th>
<th>Focus of University Certificate</th>
<th>Number of Credits</th>
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<tr>
<td>Ann</td>
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<td>19</td>
<td>F</td>
<td>American Sign Language</td>
<td>12</td>
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<tr>
<td>June</td>
<td>Down Syndrome</td>
<td>24</td>
<td>F</td>
<td>Performing Arts</td>
<td>12</td>
</tr>
<tr>
<td>Bea</td>
<td>Intellectual Disability</td>
<td>28</td>
<td>F</td>
<td>Early Childhood Education</td>
<td>12</td>
</tr>
<tr>
<td>Ben</td>
<td>Intellectual Disability</td>
<td>30</td>
<td>T</td>
<td>General Studies</td>
<td>12</td>
</tr>
<tr>
<td>Barb</td>
<td>Intellectual Disability</td>
<td>23</td>
<td>F</td>
<td>Office Administration</td>
<td>18</td>
</tr>
<tr>
<td>Carl</td>
<td>Mowat-Wilson Syndrome</td>
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<td>M</td>
<td>Campus Recreational</td>
<td>9</td>
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<tr>
<td>Gary</td>
<td>Intellectual Disability</td>
<td>26</td>
<td>M</td>
<td>Radio Media</td>
<td>9</td>
</tr>
<tr>
<td>Jess</td>
<td>Intellectual Disability</td>
<td>19</td>
<td>F</td>
<td>Culinary Arts</td>
<td>12</td>
</tr>
<tr>
<td>Kim</td>
<td>Intellectual Disability</td>
<td>20</td>
<td>F</td>
<td>General Studies</td>
<td>12</td>
</tr>
<tr>
<td>Lily</td>
<td>Autism</td>
<td>18</td>
<td>F</td>
<td>Culinary Arts</td>
<td>16</td>
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<td>Mike</td>
<td>Down Syndrome</td>
<td>28</td>
<td>M</td>
<td>Food Systems</td>
<td>18</td>
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<tr>
<td>Kelly</td>
<td>Intellectual Disability</td>
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<td>F</td>
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<td>9</td>
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<tr>
<td>Tracy</td>
<td>Intellectual Disability</td>
<td>19</td>
<td>F</td>
<td>Early Childhood Education</td>
<td>18</td>
</tr>
<tr>
<td>Sandy</td>
<td>Down Syndrome</td>
<td>29</td>
<td>F</td>
<td>Video Production Media</td>
<td>18</td>
</tr>
</tbody>
</table>

*Note.* Sexual Identity: M=male; F=female; T=transgender.
Becoming Self-Determined: Creating Thoughtful Learners in a Standards-Driven, Admissions-Frenzied Culture (Book Review)

Sharon Field & David Parker (Editors)  
Huntersville, NC: AHEAD 2016  
233 pages, $33.50 (AHEAD Members), $45.00 (Non-Members) (Paperback)

Reviewed by Linda Nissenbaum

You have just met with a student and his parents who came to you seeking answers as to why he is doing so poorly at your university. The parents proclaim that their student is bright, talented, and “they” did everything “they” needed to do to get him into your institution. They tell you that he took all AP classes; got extremely high scores on the ACT and SAT tests, had extracurricular activities, and received early admission invitations to many high ranking colleges and universities. The parents are beside themselves and want to know, “Why is my son on probation and in danger of losing some of his financial aid? How can this be? What is wrong with your college; why aren’t you helping him?”

At a time when more and more colleges and universities are concerned with retention and successful outcomes, parents, students, and educators are realizing that external factors such as extremely competitive admissions standards and the rigorous demands of mandated testing do not necessary prepare college students with the, “grit, resilience, and self-determination needed to fully reap the benefits that education has to offer” (p. 1). Skills such as the willingness to explore, take risks, initiate, take responsibility, define one’s own goals, and reflect on one’s experiences to find new goals which are needed to be successful in college and beyond, are, “diametrically opposed to what students needed to do to gain admission to college” (p. 2). In fact, William Deresiewicz and Mel Foster (2014) stated our current system of education has instead created excellent sheep.

Psychologist Madeline Levine (2008), in her book The Price of Privilege, makes the case that in our high school system, the rigid expectations and high levels of competition mitigates the healthy development of a strong sense of self which Field and Parker believe is created through the courage, curiosity, and tenacity so that students can be fully engaged in and reap the benefits from higher education. Based on this, when accepted into an institution of higher learning, all students should have the educational background, tenacity, and desire to be successful, and yet, we know that many of these students never reach their educational goals and dreams despite having excellent credentials, test scores, and making it through the rigorous application process. These students will not reach their academic goals and may not even be retained the following semester or academic year. What is missing?

In their book, Becoming Self-Determined: Creating Thoughtful Learners in a Standards-Driven, Admissions-Frenzied Culture, Drs. Sharon Field and David Parker call for higher education to change their admissions practices and marketing and spend the money to build supports and practices that set their institutions apart from other like institutions. They believe that the philosophy and practice of encouraging self-determination must be infused into all of our practices and supports, and their book provides the reader with tools and perspectives to encourage self-determination in students so that they can learn skills that will allow them to successfully seek their goals and meet their aspiration.

The book starts with a poignant forward written by Stephan Smith, Association on Higher Education and Disability (AHEAD) Executive Director. He says the book will prepare the reader to be, “better enlightened to understand our role in supporting others’ self-determination, better informed about precisely what those words mean and why they and we are important” (p. x). Field and Parker introduce ways higher education can support students to develop skills that will lead them to successful completion of their higher education and other life-goals. They state that with all the pressure to be “perfect,” it is not surprising that college students are experiencing more heightened rates of depression and anxiety than their predecessors. “There is ample evidence to support that organizing higher education opportunities around the concept of self-determination leads to more effective, engaged learners who are more successful in their education pursuits and in the post-school endeavors” (p. 218).
Throughout the seven chapters, nine authors provide research-based and practical strategies for infusing self-determination into the way we educate. And, for those readers who want to explore the recommended strategies in more depth, at the end of each chapter, a plethora of references for further support and study are provided.

The first chapter, "Developing Thoughtful Learners: Supporting Self-Determination in Postsecondary Education," is devoted to the theory and practice of Self-Determination. Sharon Field introduces the reader to the “Action Model for Self-Determination” which provides a step-by-step framework for the promotion of self-determination in our students that includes: Know Yourself and Your Content; Value Yourself; Plan, Act, and Experience Outcomes and Learn (p. 18). She writes about this period of time, age 18-25, as being developmentally essential and provides ways which educators can infuse self-determination into higher education through “shining examples” (p. 35) of currently used practices that promote self-determination into higher education (e.g., appreciative advising, Universal Design of Instruction, academic coaching, embracing contemplative practices to support self-determination, fostering self-determination through family involvement, resilience and grit). These areas are shared in detail in the following chapters of the book.

In the second chapter, “Appreciative Advising: A Theory-to-Practice Framework for Putting Self-Determination Theory into Action,” authors Jennifer Bloom, Ye He, and Bryan Hutson introduce generative relationships that support self-determination. Appreciative advising is described as a step-by-step model which allows advisors to help students uncover their strengths and skills, identify their stories and their dreams, co-construct an action plan to make their dreams a reality, support and encourage students as they pursue their plan, and continually challenge our students to do better and become better. The authors show how appreciative advising can be used to empower students as it provides “differentiated scaffolding” and supports for students as they, “internalize the appreciative mindset to guide their own learning process” (p. 55).

In the third chapter, “Universal Design for Instruction (UDI): Inclusive Learning Environments that Support Student Self-Determination,” Sally Scott describes how Universal Design is able to play a key role in promoting self-determination for students and instructors. Scott shows the reader how learning about the principles of UDI, knowing the emerging research on the outcomes of UDI, and using ideas from a chart called “Ten Quick Tips for Inclusive Instruction and How They Reflect UDI and Promote Self-Determination” allows the creation of a learning environment that is beneficial to “developing student autonomy, competence, and relatedness to maximize their motivation and potential for learning” (p. 82). Scott uses scenarios to demonstrate the use of the principles of UDI versus the lack of UDI and how these principles can affect self-determination for students.

As a Certified Life Coach who has witnessed the power of coaching firsthand, I find the fourth chapter, “Academic Coaching: Using a Coaching Approach to Build Student Self-Determination” by Jodi Sleeper-Triplett and Christina Fabrey, essential in building self-determination in students. In this chapter, the reader learns about the processes used in academic coaching which allow students to become creative, resourceful, and whole. This process improves transition from high school to college, increases students’ intrinsic motivation and self-direction, and encourages them to not only survive but to thrive in the college experience. Coaching allows students to do well academically and socially and persevere toward graduation which is a key issue that colleges and universities are addressing. The authors share the core coaching competencies that are defined by the International Coach Federation. Extensive examples, questions, and scenarios are provided using the coaching model to show how key coaching is in promoting self-determination and retention of students. “When institutions shift to a transformational model (coaching), students are seen as creative, resourceful, and whole, with the ability to accomplish their goals and having the self-determination to obtain the support required to achieve” (p. 111).

In chapter five, “Increasing Awareness and Decreasing Stress: Embracing Contemplative Practices to Support Self-Determination,” Sharon Field explains that, “the relationship between awareness of external events and resources, self-awareness, and agency is paramount to education focused on self-determination” (p. 115). Field delves into the importance of mindfulness and contemplative practices and their connection to self-determination. She provides the Mindfulness Outcomes and what the practice of mindfulness can do to promote success in focus, improved working memory, increased insight, reduced stress, decreased emotional reactivity, increased cognitive flexibility, and improved satisfaction in personal relationships. She shares additional contemplative practices and examples
of the ways colleges are infusing these practices both in and outside of the classroom.

Given the conditions faced by today’s students that threaten their ability to participate in their learning environment with focused attention, intrinsic motivation, and self-regulation, a compelling case can be made for providing resources to students, faculty, and staff on college campuses to learn about and engage in mindfulness practices and contemplative pedagogical practices. (p. 137)

Often college faculty and administrators wonder how to balance FERPA and the strong desire for parents to be involved in their students’ college experience. In chapter six, “Involving Families in Promoting Self-Determination: Doesn’t FERPA Forbid Family Involvement,” Theresa Maitland shares that it might be odd to include this chapter on including parents in a book about self-determination. However, she states that, “after a decade of gradually opening up to the idea of partnering with parents, I now see the value of inviting them into my work” (p. 143). Maitland tells readers that with proper consent, parents can play a very important role in increasing the students’ self-determination ability. The author talks about the practice of parental collaboration and shares that there are typically no relationships more important than the ones those students have with their parents and other family members. The chapter also explains how student/parent relationships are different today because current technology allows for much more communication and involvement. Maitland also explores whether parents are part of the problem or the solution, “The common denominator in these recommendations is for parents to form a more collaborative versus authoritarian relationship with their young adults” (p. 155). She shares numerous resources from college websites that show parents how to create such collaborative relationships and gives tips to providers as to how to work with students and their parents in meaningful ways that encourage self-determination. Additionally, Maitland shares experiences with four different students to illustrate how this has been successfully done. She concludes by saying that her experiences have, “increased my belief that partnering with families and significant individuals in the lives of college students is not only helpful; it could be considered a necessity” (p. 178).

The last chapter, “Promoting Students’ Resilience and Grit: Cultural Challenges and Campus Opportunities” by David Parker, Nicole Nelson, and Anna Merrill, stresses the importance of the development of intrinsic motivation and the importance that resilience and grit play in self-determination. The authors share that along with the academic support of tutoring, writing centers, and supplemental instruction, more colleges and universities are recognizing the need to support mental health issues and ways for students to gain skills to deal with daily life challenges. The authors share research, and give extensive examples, practices, and specific strategies designed to promote resilience and grit. “Children raised in the 1990’s and early twenty-first century have been referred to as the ‘Bubble-wrap Generation’” (p. 210). They share that some individuals believe that there is an entire generation of young adults who have not been allowed to fail. The authors share supportive ways to help students learn to respond to rejection or failure so that they can gain the skills to turn these lessons into learning opportunities and successes.

The outstanding message that remains throughout this book is Field and Parker’s solid case for the importance of instilling self-determination into the work that is done in higher education. They strongly emphasize that taking this approach will not add a burden to the work that is done, but it will allow a shift in the way educating students is approached and allow educators to do their jobs with a more holistic perspective in mind. While all of these practices do not have to be started at once, Drs. Field and Parker and the other authors provide ways for colleges and universities to take a first step toward the goal of creating students who are more creative, resourceful, and whole by infusing self-determination in the approaches taken.

For those college administrators and faculty who feel that adding support for self-determination might create a watered-down version of the college experience for students, Field and Parker proclaim that, “embracing self-determination does not lessen rigor; in fact, it can increase it” (p. 219). Embracing self-determination for our students will allow colleges and universities to increase retention, provide better opportunities for success while in school and their careers, and decrease rates of mental illness. I highly recommend this important resource for anyone interested in the development of students. This resource provides indisputable research, theory, and practical strategies which allows administrators, faculty, staff, and parents to help students develop in ways that will continue to improve their lifelong learning, relationships, and growth.
References


About the Author

Linda Nissenbaum received her B.A. in Special Education from the University of Missouri, Columbia, and her M.A. in Teaching from Webster University, St. Louis. Her experience includes teaching in the K-12 system, currently directing Disability Support Services in the Access Office at St. Louis Community College-Meramec, Title IX Hearing Chair, membership on her college’s Behavior Intervention Team, and two years as ADA Coordinator for the St. Louis Community College.

A longtime member of AHEAD and current AHEAD Board Member, she has presented at PTI, AHEAD’s Regional Training Institutes, and AHEAD’s International Conferences. She currently serves on AHEAD’s Government Relations Committee and the Practice Brief Review Board for the Journal of Post-Secondary Education and Disability.

Having been trained as a Co-Active Life Coach by the Coaches Training Institute, she obtained the credentials of a Certified Professional Co-Active Coach, and additionally received the certification of Professional Certified Coach through the International Coach Federation. In addition to directing Disability Support Services at STLCC-Meramec, she has a part-time private coaching practice which includes clients with ADHD. She can be reached at: lnissenbaum@stlcc.edu.
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• Innovation: Proposes innovation of theory, approach, or process of service delivery based on reviews of the literature and research.
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• Write sentences using active voice.
• Authors should use terminology that emphasizes the individual first and the disability second (see pages 71 - 76 of APA Manual). Authors should also avoid the use of sexist language and the generic masculine pronoun.
• Manuscripts should have a title page that provides the names and affiliations of all authors and the address of the principal author. Please include this in the ONE Word document (manuscript) that is submitted.
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Please submit all components of a Practice Brief (i.e., cover page, abstract, body, appendices) as a single Word document. These manuscripts should use the following headers/sections:

• Title Page: Title not to exceed 12 words. Identify each author and his/her campus or agency affiliation. State in your email cover note that the work has not been published elsewhere and that it is not currently under review by another publication.
• Abstract: The abstract needs to answer this question: “What is this paper about and why is it important?” The abstract should not exceed 150 words.
• Summary of Relevant Literature: Provide a succinct summary of the most relevant literature that provides a clear context for what is already known about your practice/ program. If possible, describe similar practices on other campuses. Priority should be given to current
• literature published within the past 10 years unless an older, seminal source is still the best treatment of a particular topic/finding.

• **Depiction of the Problem:** In addition to a clear statement of the problem being addressed, consider the following questions when stating the purpose of the article: What outcome, trend, or problem might improve if your practice/program works? What gaps or problems or issues might persist or arise if this practice/program did not exist?

• **Participant Demographics and Institutional Partners/Resources:** Maintain the anonymity of the students, colleagues, and campus(es) discussed in the article but provide a clear demographic description of participants (e.g., number of students, disability type, gender, race and/or ethnicity whenever possible, age range if relevant) and the types of offices or agencies that were collaborative partners (if relevant).

• **Description of Practice:** Briefly and clearly describe your innovative practice/program and how it has been implemented to date. Tables and figures are encouraged to provide specific details you are comfortable sharing. They condense information and enhance replication of your practice/program on other campuses.

• **Evaluation of observed outcomes:** Whenever possible, summarize formative or summative data you have collected to evaluate the efficacy of your practice/program. This can be anecdotal, qualitative, and/or quantitative data. Support any claims or conclusions you state (e.g., “Our program greatly enhanced students’ ability to self-advocate during their transition to college”) with objective facts and/or behavioral observations to support these claims.

• **Implications and Portability:** Discuss what you have learned thus far and how you could further develop this practice/program in the future. Be honest about any challenges you may have encountered. This transparency enhances the rigor of your reporting. What would you do differently next time to achieve stronger outcomes? Provide a clear description of how and why disability service providers on other campuses should consider adapting your practice/program. Finally, how could your practice be studied by researchers? Identify possible research questions, hypotheses, or potential outcomes that could be studied if you and/or colleagues could expand the practice/program into a research investigation.

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Please contact the JPED Executive Editor at jped@ahead.org to suggest books to be reviewed or to discuss completing a book review. Contact and discussion should be done before the book review is completed in order to expedite the procedures in the most efficient and fairest way possible.

**Content and Format**

In general, the book review should present:

1. An overview of the book, providing the book's stated purpose, the author's viewpoint, and a general summary of the content.

2. An evaluation of the book, elaborating on the author's objectives and how well those objectives were achieved, the strengths and weaknesses of the book along with the criteria you used for making that assessment, and the organization and presentation of the book. Recommendations should specify to whom you would recommend the book, why, and how you would suggest the book be used, and address its potential contribution to our field.


At the end of the review, please list your name and institutional affiliation.

**Submission**

The length of a book review can range from 800-1200 words. Please send in an email attachment in MS Word, double-spaced to jped@ahead.org per instructions above in “How to Submit Manuscripts.” After the review is submitted, the Executive Editor or designee will edit the manuscript and follow up with you about the publication process.

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