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From the Editor

David R. Parker

During the past five years, the Journal of Postsecondary Education and Disability has grown in a number of exciting ways. JPED transitioned from a print-based publication to one that is now published in various formats to enhance accessibility for a wide range of readers. Its editorial board has become more international, reflecting AHEAD’s leadership as a global organization. Today, reviewers include disability scholars and practitioners from Japan, New Zealand, Ireland, the United Kingdom, and South Africa, as well as Canada and the U.S. Similarly, JPED has published an increasing number of manuscripts from countries around the world. Each culture develops its own policies and procedures regarding postsecondary students with disabilities. These developments are strengthened by our ability to learn from one another through conferences and publications. The Journal will publish an International issue later this year that provides a comprehensive update about policies, practices, and research findings from many cultures in and outside of North America.

The current issue addresses a wide range of topics. Several articles report on innovative transition programs, the use of assistive technology, and campus efforts to meet the needs of emerging populations of students with autism spectrum disorders and/or intellectual disabilities. In the first research article, Dallas, Ramisch, and McGowan conducted an extensive review of the literature to address the role of family in the experiences of postsecondary students on the spectrum. Campus professionals continue learning how to balance the expectation that college students self-advocate as independent adults while also recognizing that family members may play an important role in this transition. Read this article to determine how published studies can inform us about this complicated – and possibly controversial – topic.

Gibbons, Cihak, Mynatt, and Wilhoit present the second research article, which addresses a similar topic using different data sources. Their investigation explored the attitudes of 152 faculty and 499 students without disabilities about students with intellectual disability and autism. Describing this emerging population as “a new frontier in higher education,” the authors found a willingness to support programming for these students as well as questions about inclusive classroom practices.

In the next research article, Cole provides updated empirical insights into a topic that has been studied by many other investigators. In the wake of longitudinal research that reports a drop in the number of students with disabilities who seek accommodations through a Disability Services office, the author used a mixed-methods research design to study 31 undergraduates with learning disabilities. Read more to learn about differences between the students who chose to disclose their disability-related needs and those who did not.

Nelson and Reynolds conducted a small study that explored the role of speech recognition software while helping undergraduates improve their composition skills. Thick descriptions from their qualitative research provide rich insights into the participants’ writing processes and how campus providers can help students strengthen their writing with the use of assistive technology. The participants were remarkably informative about their writing needs and how technology could – and could not – assist them with a variety of academic assignments.

In response to growing numbers of college students on the autism spectrum, Burgstahler and Russo-Gleicher investigated the application of Universal Design (UD) to instructional practices. Given the promise of UD to make college instruction more immediately accessible to wide range of learners, the authors argue that their examples can serve not only students on the spectrum but many other students in higher education, too.

In the final research article, Daly-Cano, Vaccaro, and Newman use a grounded theory approach to gain a greater understanding of how students developed and utilized self-advocacy skills. Their qualitative study informs us about the experiences of eight students who had to adapt their self-advocacy skills from K-12 schooling to a higher education setting. Read more to learn how students developed these skills and the three ways in which they used them in a university setting.

In addition to the above research reports, this issue includes three highly informative Practice Briefs. In the first, Novakovic and Ross describe the development of a transition program for new college students with various disabilities. Read how the authors conducted “College Student for a Day” and their plans to improve a successful program using a range of evaluative information. Shmulsky, Gobbo, and Donahue contribute an article that describes another college transition program, this one for students with Autism Spectrum Disorders. Some of the unique features of this program include ongoing
support throughout the students’ first year and structured alliances with parents. The third practice brief, by Agarwal, Moya, Yasui, and Seymour, explores the use of Photovoice as a tool for students with disabilities to educate campus allies about barriers inherent in their college environment.

This issue concludes with a book review by Adam Crawford, who describes *Allies for Inclusion: Disability and Equity in Higher Education* (ASHE, 2013). The reviewer provides a clear overview of this recent publication and explains its power to support paradigm shifts on campuses that endeavor to embrace a social model of disability.

With this issue, I am concluding a five-year stint as JPED’s Executive Editor. It has been a remarkably exciting experience to work with the AHEAD board and editorial leadership team, beginning with Stephan Smith, Richard Allegra, and Valerie Spears. Their disciplined and dynamic leadership have done a great deal to expand JPED’s capacity to report evidence-based practices and innovative campus developments. Similarly, it has been both a joy and a privilege to work with members of the Research and Practice Brief editorial boards. These researchers and practitioners are tireless in their efforts to shape the literature in rigorous but supportive ways. JPED’s next Executive Editor, Dr. Roger Wessel (Ball State University), will begin his term with the next issue. I wish this highly published scholar, professor of higher education, and gracious gentleman the very best in advancing the scope and vision of JPED.
Students with Autism Spectrum Disorder and the Role of Family in Postsecondary Settings: A Systematic Review of the Literature

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Abstract

This article provides a systematic review of the literature pertaining to students with Autism Spectrum Disorder (ASD) and the potential role of family members in higher education settings. The research questions guiding the review included: (a) What is the identified role(s) of family members of postsecondary students with ASD in postsecondary educational settings? and (b) Does family involvement in postsecondary education settings result in positive outcomes for students with ASD? The search terms, Autism Spectrum Disorder, familial involvement, postsecondary education, and educational success and appropriate synonyms, yielded six articles that fit the inclusion criteria for this review: empirically-based studies conducted in the United States, either dissertations or peer-reviewed articles, published between the years 2003 and 2014, and included some mention of family support or involvement for college students with ASD. Given the very small sample of articles that met the criteria for this review and the limitations of each article, not enough research on family involvement exists to answer the research questions. It is unclear whether or not family members should be involved in postsecondary educational settings, what their potential roles might be, and if family member involvement would be beneficial for students with ASD.

Keywords: Autism Spectrum Disorder, postsecondary education, family involvement, educational success

The Center for Disease Control and Prevention estimated that 1 in 50 children are diagnosed with Autism Spectrum Disorder (ASD) and the prevalence of cases is increasing (Shattuck et al., 2012). Cavanagh and VanBergeijk (2012) reported that approximately 751,000 individuals with ASD in the United States are under age 20 and estimated that 500,000 of these individuals may set their sights on higher education. However, gaining access to postsecondary settings may be a challenge. In a study using the National Longitudinal Transition Study-2 (NLTS-2) data, Shattuck et al. (2012) found that more than 50% of youth with ASD did not participate in postsecondary education within two years after leaving high school and participation rates were lower than for students with learning disabilities and speech and language impairments. Wei, Yu, Shattuck, McCracken, and Blackorby (2012) found that postsecondary students with ASD had the third lowest enrollment rate among 11 disability categories.

Those students with ASD who do move on to postsecondary institutions are at risk for decreased retention and graduation rates (Schlabach, 2008; Wei et al., 2014). Using the NLTS-2 data, Newman et al. (2011) found that approximately 80% of postsecondary students with ASD were working toward some type of diploma, certificate, or license. However, only 39% completed school. While this completion rate is not significantly different from other student disability categories, it is slightly lower than the average graduation rate for all college students. According to the U.S. Department of Education (2013), the average six year graduation rate for first-time college students who started college in 2005 ranged from 31% to 88% depending on the college, with an average graduation rate of 59%. Contrary to reports of being at risk for retention and graduation, though, Wei et al. (2013), who also used the NLTS-2 data, found that community college students with ASD majoring in science,
technology, math, or engineering (STEM) were twice as likely to transfer to 4-year universities compared to peers with ASD in non-STEM majors and students with ASD in STEM majors were more likely to persist (i.e., stay in school, graduate) when compared to peers with ASD in non-STEM majors.

Limitations of Postsecondary Students with ASD

In the past, students on the spectrum who have registered with campus disability resource centers (DRCs) typically had diagnoses of ASD, Asperger’s Syndrome (AS), Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS), or are described as having “high functioning autism” (Bauer, 2008; Smith 2007). Although campus disability support professionals (DSPs) will continue to meet individuals who may present documentation based on this diagnostic system, the most recently published Diagnostic and Statistical Manual of Mental Disorders (DSM-5) removes the label of AS and PDD-NOS and presents a new definition of ASD. The DSM-5 states that individuals previously diagnosed with AS or PDD-NOS should now be diagnosed with “Autism Spectrum Disorder” (American Psychiatric Association [APA], 2013).

According to the DSM-5, for an individual to qualify for ASD, he or she must have “deficits in social communication and social interaction” as well as “restricted, repetitive patterns of behavior, interests, or activities” (APA, 2013, p. 50). Individuals given the diagnosis of ASD will also be given one of three severity levels ranging from “requiring support” to “requiring very substantial support” (p. 52). The DSM-5 also notes, “Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder” (p. 51). Based on the DSM-5 information it seems that college students with ASD may need more support regarding behavioral issues, social communication, and/or social interaction.

Empirical research on the experiences and limitations of college students with ASD is limited (Gelbar et al., 2014), but based on the diagnostic criteria in the DSM-5, college students with ASD will most likely experience specific challenges in social communication and interaction. These students may have unwanted social behaviors such as scarce eye contact, appearance of social disengagement or disrespect, verbal interruptions, blinking or talking quickly, excessive nervousness, and/or inappropriate laughter/smiling (Trammel, 2013). These types of behaviors could be judged negatively in a college classroom where unspoken established social norms of engagement, respect, and socializing are often required (Trammel, 2013). Camarena and Sarigiani (2009) documented self-reported social limitations that included understanding others’ feelings, expressing feelings, participating in games or activities, and finding peers who share similar interests. Schlabach (2008) also reported that students had difficulty with social relationships as well as challenges with sensory issues, including noise in the classroom environment (e.g., clicking pens) and tactile preferences (e.g., specific bed sheets).

Additionally, researchers have found that postsecondary students with ASD have limitations associated with executive functioning (Adreon & Durocher, 2007). Executive functioning is associated with the area of the brain in charge of problem-solving behaviors (Duncan, 1986) and may include functions such as “forming abstract concepts, having a flexible sequenced plan of action, focusing and sustaining attention and mental effort, rapidly retrieving relevant information, being able to self-monitor and self-correct as a task is performed, and being able to inhibit impulsive responses” (Liss et al., 2001, p. 261). Limitations in executive functioning may manifest as academic issues such as diminished ability to concentrate in class, walk from class to class, work independently, and follow instructions (Camarena & Sarigiani, 2009). Furthermore, case studies have documented the presence of anxiety, loneliness, depression, bullying, roommate concerns, and time management issues among this population (Gelbar et al., 2014). Not all postsecondary students with ASD will have the same level of difficulty with regard to executive functioning, behavioral, and/or social issues; however, these are areas where students may need support while in college.

Purpose of the Review

To assist in serving postsecondary students with ASD and their family members, books have been written specifically for this population to aid with the transition to postsecondary settings. These include publications such as The Parent’s Guide to College for Students on the Autism Spectrum (Thierfeld Brown, Wolf, King, & Bork, 2012) and Students with Asperger Syndrome: A Guide for College Personnel (Wolf, Thierfeld Brown, & Bork, 2009). The authors of these books contend that parental or family involvement during the transition to a postsecondary environment is often essential for student success (Wolf et al., 2009) and that communication between university professionals, specifically DSPs and family members, should be ongoing (Thierfeld Brown et al., 2009). Specifically, the authors recommend family involvement during
the transition to college in order to help answer DSPs questions and gauge a student’s level of self-advocacy skills, his/her knowledge of ASD diagnosis, specific reactions to stress/changes, level of independent living skills (e.g., laundry, shopping), employment history, and/or supervision needs (Wolf et al., 2009). Wolf et al. reason that, given some of the communication deficits among this population, involving family members can help expedite the process of identifying students’ needs as well as (a) actively involve the student, (b) make the family feel supported and understood, and subsequently (c) the DSP does not become overwhelmed with the small details (p. 32).

While the authors do promote student independence and self-advocacy, Wolf et al. (2009) recommend DSPs stay in touch with parents after the initial transition. For example, a DSP “point person” would have regular contact with family members regarding a student’s progress. After the student provides written permission, the point person would establish agreed upon boundaries with parents or other family members and determine how often is appropriate to discuss the student’s progress. With the parent now moving to a “consulting” role, a phone call schedule of once per week for five minutes and no more than two emails per week may be established to discuss a student’s progress (Wolf et al., 2009). The authors reported that on-going communication gives parents an opportunity to provide information they feel might be helpful and the DSP can provide an update on the student’s general progress during the semester. However, routine non-emergency situations would not be regularly communicated by DSPs to family members, such as missed appointments or classroom assignments (Wolf et al., 2009).

Thierfeld Brown et al. (2012) and Wolf et al. (2009) have recommended that ongoing family involvement (e.g., parents) throughout the college experience is needed and can lead to student success. They suggest that adding additional familial supports may help with retention and graduation rates of students with ASD through addressing some of the limitations that post-secondary students with ASD experience. However, it is imperative to ground recommendations on current empirically based research to ensure that best practices are used. Therefore, the purpose of the current article is to provide a systematic review of the literature on students with ASD and family involvement during college experiences. If parents or other family members are to have significant roles in postsecondary educational environments, it will be important for DSPs to be informed of these specific roles and exactly how family members can help support college students with ASD.

**Research questions about family involvement.** Specific research questions were developed to help guide the authors of the manuscript. The research questions included:

1. What is the identified role(s) of family members of postsecondary students with ASD in postsecondary educational settings?
2. Does family involvement in postsecondary education settings result in positive outcomes for students with ASD?

The authors chose to use the term “family” to incorporate research that may have included other family members besides parents.

**Methodology**

Using the research questions, the authors identified four search concepts: ASD, familial involvement, postsecondary education, and educational success. The authors conducted electronic searches in the following five indexes/databases in the Northern Illinois University library system: CINAHL (EBSCO), ERIC (EBSCO), PsychInfo, Web of Science, and Proquest Dissertations. Using these databases, synonyms were harvested for each concept. Harvested synonyms for each individual concept were combined with Boolean operator OR, all four concept lists were combined using Boolean operator AND (See Appendices A & B), and searches were run in CINAHL, ERIC, and Web of Science databases in March and April of 2014. The same terms were used to search in ProQuest dissertations in everything (title, abstracts, keywords) except full text. Similar search terms, though differently constructed, were used to search PsychInfo. The authors found that using all four concepts provided too few results. The authors then repeated the searches, excluding the educational success concept. Results then were limited by date (i.e., 2003-2014) and peer-review (except in the ProQuest dissertation database). All of the authors reviewed the entire results list and chose appropriate articles to review further. Once the database searching was complete, the authors examined reference lists of articles and dissertations. In addition, authors hand searched the table of contents of ten journals for the last ten years (See Appendix C).
Results

Result lists with titles and abstracts for each database were reviewed. Only empirical studies within the United States conducted between 2003 and 2014 were included; review articles were excluded. In all, 459 records were reviewed from databases (42 titles reviewed using all four concepts (column 3) added to the 417 titles resulting from searching with three concepts (See Table 1). Six articles were deemed appropriate for this review article. Searching the table of contents of ten journals for ten years revealed no additional titles.

The authors found six empirically-based, peer reviewed articles that were related to the research questions outlined above. A description of the findings of each article is provided below and Table 2 provides an outlined summary of each article.

Barnhill (2014) conducted an exploratory study of current practices for supporting students with ASD on college campuses. Participants ($N = 30$) included representatives from campus DRC offices at 19 public institutions and 11 private institutions that offered services for students with ASD such as extra time on exams, an alternate testing site, tutoring, and a note taker. Respondents participated in a telephone survey consisting of open and closed response items. The sections of the survey identified demographic information, offered support services, student outcome information, and the extent of parental involvement. Although most DRC representatives did not have student outcome information (e.g., graduation rates, drop-out rates), at least one respondent reported that students with ASD who lived within two hours of the university fared better in school than students who lived further away. DRC representatives indicated that parents could be a positive resource and could offer important information about their child with AS or ASD. Barnhill (2014) reported that DRC professionals viewed parents positively, as partners, and encouraged a relationship with parents by asking students with ASD to sign an informed consent form so they could speak with each other. Not all DRC personnel involved parents to the same extent. One respondent communicated with parents via weekly emails that eventually tapered off to twice per month and then once per month. Another respondent reported that students with ASD were assigned peer mentors and together both individuals called the student’s parents once per week. Other activities that respondents reported included parent information sessions in the summer or beginning of the semester, written reports (on progress, strengths, areas of concern) sent to parents after a summer transition program, group parental meetings twice a semester, and end-of-semester celebrations with family members. Reported limitations of this study were that an Internet search was used to identify programs and not all programs targeted in the study offered support services specifically for students with ASD. Other programs that did offer services were not contacted; therefore, some programs that may have been appropriate for the study were not included.

Camarena and Sarigiani (2009) interviewed high functioning students with ASD ($n = 21$) and their mothers ($n = 20$) and fathers ($n = 13$) to assess post-secondary educational aspirations, perceived obstacles, and resources needed for success. Participants who volunteered for the study were recruited via email using special education networks in Michigan. Interviews

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Note. Numbers in parentheses refer to results once peer-reviewed and date limitations were applied to databases.
took place in-person with the survey consisting of a demographics section, Likert-scale rating questions, and open-ended questions. Qualitative data were analyzed using a constant comparative method and themes were established. One question on the survey asked of both parents and students was, “Do you have any other ideas for what would help students with the same kinds of special needs as you (‘your child’ was used for parents) be more successful in preparing for college?” (p. 123). Two categories of support program recommendations were established that included academic (i.e., academic accommodations, coursework/curriculum) and nonacademic supports. The content analysis for the question above found a theme of parental involvement that fell within nonacademic supports. Examples of other nonacademic support themes included social skills/peers/mentoring, housing/roommate concerns, trained specialists/aides, and campus disability awareness. Parental involvement was mentioned by four of the mothers (20%) in the study. No students or fathers expressed a need for parental involvement when asked about specific program recommendations. The authors did not detail what was meant by parental involvement as a nonacademic support.

Limitations that the authors noted included a small sample size, documentation was not required to prove an ASD diagnosis, and a comparison group of students without disabilities was not included. It should be noted that parents and students were more concerned with nonacademic situations (e.g., daily living skills, housing, campus life transition) rather than academic success and parents were concerned that they would have to “educate” postsecondary institutions about ASD and student needs.

Morrison, Sansosti, and Hadley (2009) interviewed mothers (N = 4) of college-bound male students with ASD on supports or accommodations and self-advocacy skills or strategies needed to be successful in school. Parents were recruited through a professional network and asked open-ended questions regarding college supports or accommodations and self-advocacy skills or strategies needed to increase chances of student success in school. Two authors reviewed the transcripts and identified two primary themes (i.e., supports and accommodations, self-advocacy needs and supports). Morrison et al. (2009) identified a sub-theme of parental involvement related to the larger theme of self-advocacy needs and supports. The authors reported that all mothers agreed that parental involvement would be needed more for their children compared to their peers. Parental involvement activities included assistance in daily living activities (e.g., laundry, money managing, doctor appointments, paying bills). One parent reported a need to allow her son to gain independence, but also to keep a “watchful eye for potential struggles” (p. 83). Mothers identified their role as helping their children identify and deal with challenging social situations, such as problems that arise in a residence hall or being able to identify if someone is trying to take advantage of them. Reported limitations of the study included a small sample size and the use of only qualitative interview data.

Robledo and Donnellan (2008) interviewed academically successful college students with Autism (N = 5; two females and three males). The purpose of the study was to explore supportive relationships that students had with others. The authors reasoned that supportive relationships have a significant and positive impact on the lives of students with ASD in college. Participants were asked to identify supportive relationships, describe the relationships, and the role of communication in relationships. Ten of the individuals identified were paid support staff (59%) and seven were parents (41%), while 15 out of 17 (88%) individuals identified were female. Out of the parents identified, five were mothers, while one was a father and the other a stepfather. Using constant comparative analysis, six themes of supportive relationships emerged from the data: Trust, Intimate Connection, Shared Vision of Independence, Presumption of Competence, Understanding, and Communication.

Trust was reported as foundational to supportive relationships while Intimate Connection was described as respect for one another, a closeness or bond, and determined the overall quality of the relationship. Shared Vision of Independence was something that participants felt must be a goal, acknowledged and supported by both individuals in the supportive relationship. A Presumption of Competence was described as the desire to be treated like a “regular” person, while Understanding was described as supportive individuals being knowledgeable of the student’s skills as well as the impact of ASD. Lastly, Communication was described as a challenge for students and an area where supporters may be most helpful. Limitations to the study included a small sample size and that all participants were white and from a middle-class background. Furthermore, some participants needed a support person present, limiting the privacy of the interviews.

Schlabach (2008) interviewed postsecondary students with AS (N = 5; four males and one female) and DSPs (N = 4) to explore the college experience of students with AS as perceived by students themselves and their service providers. Three postsecondary institutions were targeted (i.e., a 2-year community college, private liberal arts university, large public...
university) for the study and DSPs were contacted at each institution and asked to participate. The DSP participants were then asked to recruit potential student participants with AS. Qualitative interview data were analyzed using cross-case analysis as well as comparative analysis. After analyzing student interviews, a major theme of Students Rely on External Supports to Navigate the College Experience was noted. A Role of Family Members sub-theme was noted as an external support according to the student participant data. The author noted that all the student participants lived at or near their home so that family members could provide emotional support. Family members helped students choose an institution to enroll in, joined students on their first visit, helped students with time management, and served as advocates.

Data analysis of the interviews with DSPs determined a major theme of Involvement and Support of the Parents Facilitates Success for Students with AS. Parents were viewed as providing good insight on supporting students in and out of the classroom. DSPs viewed parents living near the students as a positive factor that provided students with an environment where sensory issues (e.g., noise, sleep issues) could be minimized. DSPs also viewed parents as social interpreters or coaches when dealing with communication issues that could arise on campus. In one case, a male student relied on his mother to disclose his disability to faculty members. Schlabach also pointed out that students and DSPs both cautioned about the extent of parental involvement due to the need for students to become increasingly independent. Limitations of the study included a small sample size, a qualitative only study design, and researcher bias when analyzing qualitative data and reporting the results.

Szentmiklosi (2009) interviewed community college students with AS (N = 5; three males and two females) to understand how the students utilized self-determination during their college experience. Self-determination was described as a set of skills in which students are goal oriented, aware of strengths and limitations, and capable of self-regulated, autonomous behavior (Field et al., 1998 as cited in Szentmiklosi, 2009). Participants were recruited through the campus DRC via staff assistance. The author reported that levels of self-determination were different among the participants, but five major and two minor themes were reported. Major themes included: Participants Enjoyed Academic Success, Found Disability Services and Accommodations Important, Chose Majors Based on Personal Interests, Relied on Family Members for Support, and Had Difficulty Developing Social Connections on Campus. Minor themes included: Importance of Faculty Connections and Importance of Attendance at a Community College Prior to a University. One of the major themes pertaining to this report is that participants relied on family members for support and influence. The author further explained that participants reported that their parents heavily influenced the choice of postsecondary institution, managed disability records and information, attended multiple DRC appointments, acted as class note taker (i.e., one mother), and provided transportation. All of the participants in the research study lived at home with their families. Limitations of the study included a small sample size, expressive communication difficulty among participants, and potential researcher bias when analyzing the data and reporting the results.

Discussion

Only six articles met the criteria established for the current systematic review. Each of them were empirically-based studies conducted in the United States, either dissertations or peer-reviewed articles, published between the years 2003 and 2014, and included some mention of family support or involvement for college students with ASD. Given the very small sample of articles that met the criteria for this review, in addition to the limitations that each article possessed, not enough research on family involvement exists to clearly answer the research questions outlined in this manuscript.

Each of the articles described in this systematic review contained limitations within their methodologies such as small sample sizes, lack of experimental designs with a control group, the majority of family members were identified as mothers, the types of participants varied (e.g., students, parents, DRC staff), various levels of ASD diagnoses were included in the studies (ASD vs. AS), and in some instances there were communication difficulties among participants with ASD. Due to these limitations and lack of strong empirical evidence, recommendations that any of these authors have provided on family involvement should be considered more theoretical in nature. Therefore, more empirically sound research is needed in order to inform DRC professionals about potential family members’ roles and their impact on students.

As described earlier, book authors (Thierfeld Brown et al., 2012; Wolf et al., 2009) have recommended family involvement in postsecondary settings to support students with ASD. Similarly, some of the articles identified in this systematic review have identified parental involvement in postsecondary settings as important. However, it appears premature to provide
Table 2

Description of Literature Focused on Postsecondary Students with ASD and Family Members (e.g., parents)

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Participants</th>
<th>Primary Diagnosis Noted</th>
<th>Methodology</th>
<th>Summary of Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnhill, 2014</td>
<td>DRC Staff (N = 30)</td>
<td>AS</td>
<td>A mixed methods exploratory study of current support practices among higher education institutions that serve students with ASD. A telephone survey was utilized with open and closed response items. Data gathered included: Support services offered (with description), Student outcomes, Extent of Parent Involvement</td>
<td>A theme included the importance of including parents. Parents were viewed positively and as partners in programs. Amount of parental involvement varied greatly among institutions, however. Examples of involvement included weekly e-mails, parental information sessions, and written progress reports to parents.</td>
</tr>
<tr>
<td>Camarena &amp; Sarigiani, 2009</td>
<td>Students with ASD (n = 21)</td>
<td>ASD</td>
<td>A mixed-methods study to assess postsecondary aspirations, potential obstacles, and resources needed for success. Semi-structured interviews were completed with adolescents with high functioning ASD and their parents. Likert-scale response items were also used.</td>
<td>A theme of parental involvement was found and categorized as a nonacademic support. This theme was found in the responses of mothers (n=4) when asked about recommendations for University programs. The authors did not define or provide examples of the parental involvement theme.</td>
</tr>
<tr>
<td>Morrison, Sansosti, &amp; Hadley, 2009</td>
<td>Mothers of college bound students with AS (N = 4)</td>
<td>AS</td>
<td>A qualitative study using an open response interview format to assess perceived college supports, accommodations, and student self-advocacy skills needed to be successful.</td>
<td>A sub-theme of parental involvement was found, related to a larger theme of self-advocacy needs and supports. Examples of parental involvement included assistance with laundry, managing money, paying bills, managing appointments, and identifying and dealing with challenging social situations.</td>
</tr>
<tr>
<td>Robledo &amp; Donnellan, 2008</td>
<td>College students with Autism (N = 5)</td>
<td>ASD</td>
<td>A qualitative study using semi-structured interviews to explore supportive relationships that students had with others. Participants were asked to define supportive relationships, identify specific individuals, describe ways in which relationships were supportive, and the role of communication.</td>
<td>Participants identified 17 individuals total (7 parents, 10 paid support staff) (15 out of 17 female). Six themes emerged from the data: Trust, Intimate Connection, Shared Vision of Independence, Presumption of Competence, Understanding, and Communication.</td>
</tr>
</tbody>
</table>
Schlabach, 2008
Students with AS (N = 5)
DRC Staff (N = 4)
A qualitative study using semi-structured interviews to explore the college experience of students with AS as perceived by students and their service providers.

Family member involvement was a theme identified through both student and staff interviews. Students relied on family members for emotional support and lived at or near the family home. Family members, usually parents, assisted with choosing an institution and visiting campus, time management, served as advocates, and assisted with social coaching/communication issues.

Szentmiklosi, 2009
Community college students with AS (N = 5)
A qualitative study using semi-structured interviews to assess levels of participants’ self-determination during college.

Relied on family members for support and influence was a major theme. Parent roles included managing disability information, attending multiple disability service appointments, acting as class note taker, and transportation.

<table>
<thead>
<tr>
<th>Schlabach, 2008</th>
<th>Students with AS (N = 5)</th>
<th>AS</th>
<th>A qualitative study using semi-structured interviews to explore the college experience of students with AS as perceived by students and their service providers.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DRC Staff (N = 4)</td>
<td></td>
<td>Family member involvement was a theme identified through both student and staff interviews. Students relied on family members for emotional support and lived at or near the family home. Family members, usually parents, assisted with choosing an institution and visiting campus, time management, served as advocates, and assisted with social coaching/communication issues.</td>
</tr>
<tr>
<td>Szentmiklosi, 2009</td>
<td>Community college students with AS (N = 5)</td>
<td>AS</td>
<td>A qualitative study using semi-structured interviews to assess levels of participants’ self-determination during college.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Relied on family members for support and influence was a major theme. Parent roles included managing disability information, attending multiple disability service appointments, acting as class note taker, and transportation.</td>
</tr>
</tbody>
</table>

Future Research

New research on this topic should include a needs assessment, utilizing postsecondary students with ASD, to ascertain their need or desire for family member involvement while enrolled in school. Including students first is consistent with the “Nothing About Us, Without Us” (Jorgensen, Bates, Frechette, Sonnenmeier, & Curtin, 2011) belief that individuals with disabilities should be directly involved with issues pertaining to them. If students perceived a need or are open to the idea of family member involvement, additional information from family members themselves would be helpful to gauge their desire to assist students and potential roles they might fill. Finally, the authors recommend a study utilizing DRC staff...
participants to assess the appropriateness or need for family involvement, staff perceptions of family member involvement, potential roles family members may fulfill, the extent or intensity of family involvement, and outcomes for students with ASD. Although some have indicated the importance of family involvement, evidence in the literature is unclear about family roles, the intensity of family members’ involvement, and its impact on students’ self-sufficiency and postsecondary outcomes. Research data gathered from all postsecondary stakeholders could help answer the research questions outlined in this article.

References


**About the Authors**

Bryan Dallas received his M.S. degree in rehabilitation counseling from Southern Illinois University Carbondale (SIUC) and Ph.D. in rehabilitation counselor education from SIUC. His experience includes working as a coordinator for SIUC’s Disability Support Services office for over ten years, serving college students with disabilities. He is currently an assistant professor in the School of Allied Health and Communicative Disorders at Northern Illinois University. His research interests include facilitating access for college students with disabilities as well as inclusive teaching methods. He can be reached by email at: bdallas@niu.edu.

Julie Ramisch received her B.A. degree in psychology from Westmont College, her M.S. degree in child development and family studies with a specialization in marriage and family therapy from Purdue University Calumet, and her Ph.D. in human development and family studies with a specialization in marriage and family therapy from Michigan State University. She is currently an assistant professor in the marriage and family therapy program in the School of Family, Consumer, and Nutrition Sciences at Northern Illinois University. Her research interests are focused on how to provide families with children with autism with effective services that help to reduce stress. She also focuses on couple relationships and is looking to develop therapeutic interventions that can help couples with children with autism improve their couple relationships. She can be reached by email at: jramisch@niu.edu.

Beth Ann McGowan received her B.A. degree in sociology from Goucher College, her Ph.D. in comparative literature and literary theory from the University of Pennsylvania, her MLIS from University of Wisconsin Madison, and a CAS in Health Sciences Librarianship from the University of Pittsburgh. She taught literature and rhetoric at the college level for nearly twenty years before she took up library work. She is currently an assistant professor at Northern Illinois University Libraries. Her research interests include health sciences librarianship, public librarianship in the mid twentieth century, and history of the book. She can be reached by email at: bmcgowan@niu.edu.
## Appendix A

<table>
<thead>
<tr>
<th>Concept</th>
<th>Concept List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
<td>Autism OR &quot;Asperger's syndrome&quot; OR &quot;autism spectrum disorder&quot; OR Asperger* OR &quot;child developmental disorders, pervasive&quot; OR &quot;pervasive developmental disorder*&quot; OR &quot;communication disorders&quot; OR &quot;learning disorders&quot; OR &quot;developmental disabilities&quot; OR &quot;autistic disorder&quot;</td>
</tr>
<tr>
<td>Postsecondary Education</td>
<td>“junior college” OR &quot;post secondary education&quot; OR &quot;post-secondary education&quot; OR &quot;higher education&quot; OR college* OR &quot;postsecondary education&quot; OR &quot;college applicants&quot; OR &quot;college choice&quot; OR &quot;college readiness&quot; OR &quot;community college&quot; OR &quot;technical college&quot; OR &quot;transition to adulthood&quot; OR university* OR &quot;college students&quot; OR &quot;transitional programs&quot; OR &quot;college acceptance&quot; OR college</td>
</tr>
<tr>
<td>Familial Involvement</td>
<td>“parental involvement” OR &quot;parental advocacy&quot; OR &quot;family involvement&quot; OR &quot;family advocacy&quot; OR &quot;advocacy&quot; OR &quot;family school relation&quot; OR &quot;parent school relations&quot; OR &quot;family role&quot; OR &quot;parents as teachers&quot; OR &quot;parent student relationship&quot; OR &quot;parenting skills&quot; OR &quot;parent responsibility&quot; OR &quot;parent teaching&quot; OR parent OR family</td>
</tr>
<tr>
<td>Educational Success</td>
<td>“school success” OR &quot;school failure&quot; OR retention OR graduation OR dropout OR &quot;dropout rates&quot; OR &quot;graduation rates&quot; OR &quot;student dropouts&quot; OR &quot;School Holding Power&quot; OR &quot;Academic Persistence&quot; OR &quot;Attendance&quot; OR &quot;College Attendance&quot; OR &quot;Dropout Research&quot; OR &quot;Dropouts&quot; OR &quot;Student Attrition&quot; OR &quot;Withdrawal (Education)&quot; OR &quot;Academic Failure&quot; OR &quot;College Readiness&quot; OR &quot;Excellence in Education&quot; OR &quot;Academic Achievement&quot; OR &quot;Graduation&quot; OR &quot;Educational Attainment&quot; OR &quot;Graduation Rate&quot;</td>
</tr>
</tbody>
</table>
Appendix B

Search with four terms:
(Autism OR "Asperger's syndrome" OR "autism spectrum disorder" OR Asperger* OR "child developmental disorders, pervasive" OR "pervasive developmental disorder*" OR "communication disorders" OR "learning disorders" OR "developmental disabilities" OR "autistic disorder") AND ("junior college" OR "post-secondary education" OR "higher education" OR college* OR "postsecondary education" OR "college applicants" OR "college choice" OR "college readiness" OR "community college" OR "technical college" OR "transition to adulthood" OR university* OR "college students" OR "transitional programs" OR "college acceptance" OR college) AND ("parental involvement" OR "parental advocacy" OR "family involvement" OR "family advocacy" OR "advocacy" OR "family school relation" OR "parent school relations" OR "family role" OR "parents as teachers" OR "parent student relationship" OR "parenting skills" OR "parent responsibility" OR "parent teaching" OR parent OR family) AND ("school success" OR "school failure" OR retention OR graduation OR dropout OR "dropout rates" OR "graduation rates" OR "student dropouts" OR "School Holding Power" OR "Academic Persistence" OR "Attendance" OR "College Attendance" OR "Dropout Research" OR "Dropouts" OR "Student Attrition" OR "Withdrawal (Education)" OR "Academic Failure" OR "College Readiness" OR "Excellence in Education" OR "Academic Achievement" OR "Graduation" OR "Educational Attainment" OR "Graduation Rate")

Search with three terms:
(Autism OR "Asperger's syndrome" OR "autism spectrum disorder" OR Asperger* OR "child developmental disorders, pervasive" OR "pervasive developmental disorder*" OR "communication disorders" OR "learning disorders" OR "developmental disabilities" OR "autistic disorder") AND ("junior college" OR "post-secondary education" OR "higher education" OR college* OR "postsecondary education" OR "college applicants" OR "college choice" OR "college readiness" OR "community college" OR "technical college" OR "transition to adulthood" OR university* OR "college students" OR "transitional programs" OR "college acceptance" OR college) AND ("parental involvement" OR "parental advocacy" OR "family involvement" OR "family advocacy" OR "advocacy" OR "family school relation" OR "parent school relations" OR "family role" OR "parents as teachers" OR "parent student relationship" OR "parenting skills" OR "parent responsibility" OR "parent teaching" OR parent OR family)
Appendix C

Journal titles

Autism
College Student Journal
Disability and Society
Education and Training in Autism and Developmental Disabilities
Focus on Autism and other Developmental Disabilities
Journal of Autism and Developmental Disorders
Journal of College Student Retention
Journal of Intellectual and Developmental Disability
Journal of Postsecondary Education and Disability
Teaching Exceptional Children
Faculty and Student Attitudes Toward Postsecondary Education for Students with Intellectual Disabilities and Autism

Melinda M. Gibbons
David F. Cihak
Blair Mynatt
Brian E. Wilhoit
The University of Tennessee

Abstract
Postsecondary education for students with intellectual disabilities and autism is a new frontier in higher education. As more programs are developed, information is needed regarding the attitudes of college faculty and students about having these students on campus. This study surveyed university faculty \( n = 152 \) and students \( n = 499 \) about their beliefs related to postsecondary education for students with intellectual disabilities and autism. Results highlight a willingness to embrace these programs but concerns about the effects in the classroom. Faculty participants indicated more uncertainty about inclusion of these students than did students. Implications for practice, education, and future research are provided.

Keywords: Intellectual disability, postsecondary, attitudes

Higher education constitutes one of the most important factors that enable an individual's potential. Individuals with intellectual disabilities (ID) have more opportunities to actively participate in an integrated society than at any other time in U.S. history due to the enactment of various laws. First, the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA; PL 108–446) increased quality preparation in secondary school and transition to postsecondary education and employment for individuals with ID. Second, the Americans with Disabilities Act of 1990 (ADA; PL 110-325) required the provision of reasonable accommodations to ensure equal access to learning and work environments. Last, and most recently, the Higher Education Opportunity Act of 2008 (HEOA; PL 110-315) provided broad authority to the Secretary of Education to waive certain sections of the law that would normally prevent students with intellectual disabilities from attending institutions of higher education. The HEOA also provided eligibility for college students with intellectual disabilities to access need-based grants and Federal Work-Study Programs.

Postsecondary programs for students with ID are becoming increasingly prevalent nationally. Many of these opportunities are provided by local school systems via programs created in response to parents' and students' desires to attend class in more age-appropriate settings once students reach the age of 18 (Grigal, Neubert, & Moon, 2001; Hall, Kleinert, & Kearns, 2000). In some cases, these opportunities are provided on a more individual basis by supporting students one at a time in one or more college classes (Doyle, 2003; Hart, Zafft, & Zimbrich, 2001). There are over 200 programs that support the participation of students with intellectual disabilities in higher education (Think College, n.d.). Most of these programs are certificate or non-degree programs, meaning that although they actively participated in campus activities and courses, participating students typically earn a credential rather than a degree (Grigal, Hart, Smith, Domin, & Sulewski, 2013).

As these programs continue to increase in number, research on university campus responses to such programs is needed. Thoma (2013) discussed the wide variations in postsecondary programs, noting the challenges in developing and implementing them, and suggested that gaining university support was helpful. Issues facing these postsecondary programs include lack of consistency in programming, varying levels of social activity inclusion, and sustainability concerns (Grigal et al., 2013). Also, previous research found that those less familiar with students with ID were less
comfortable interacting with them (Griffin, Summer, McMillan, Day, & Hodapp, 2012). Some research exists regarding the perceptions of others related to individuals with ID; however, little research has looked at the perspectives regarding the inclusion of individuals with ID in the college campus environment. Given the challenges in establishing and maintaining these postsecondary programs, university support is a necessary component for program success. The focus of this article was to explore college faculty and students’ attitudes towards postsecondary education (PSE) opportunities for students with ID.

**Postsecondary Education for Students with Intellectual Disabilities**

As the phenomenon of students with ID accessing typical college courses is relatively recent and still rare, little research exists about their experiences or the program models that support greater access to the benefits of a postsecondary education and a more typical college experience (Wagner, Newman, Caneto, Garza, & Levine, 2005). Uditsky and Hughson (2012) described inclusive PSE for students with ID as a “moral and practice imperative” (p. 299), but noted that this option was not currently available to most young adults with ID. In their review of PSE options for students with ID and autism spectrum disorder (ASD), Hart, Grigal, and Weir (2010) stated that universities were not currently prepared for the influx of these students. They stressed the importance of additional training, better understanding of academic accommodations, and overall understanding of PSE programming to help faculty and college administrators embrace PSE programs. Understanding the current college climate can help increase programming success as well.

A few early studies reported positive results about the benefits to students with ID participating in regular college classes. Weir (2004) concluded that students who benefited from an inclusive, individualized support model could make the same types of personal gains as students without disabilities. Weinkauf (2002) interviewed staff at three inclusive postsecondary education programs and identified a number of student outcomes including the development of self-esteem and confidence, improvement in academic skills, the development of job skills, and social status enhancement. In addition, Zafft, Hart, and Zimbrich (2004) found that participation in postsecondary education for students with significant disabilities correlated positively with job competitiveness, obtaining paid positions, and lessening work-related supports. PSE for students with ID positively impacts these young adults.

**Attitudinal Research**

Researchers have explored teacher beliefs about students with disabilities, including specific learning disabilities, physical disabilities, and developmental disabilities. In some studies, faculty members demonstrated positive attitudes toward students with disabilities and a willingness to provide learning and examination modifications (Bigaj, Show, & McGuire, 1999; Leyser, Vogal, Wyland, & Brulke, 1998; McKeon, Alpern, & Zager, 2013; Norton, 1997; Vaseck, 2005; Vogel, Leyser, Burgstahler, Sli gar, & Zecker, 2006; Vogel, Holt, Sli gar, & Leake, 2008). Research findings also indicated that faculty members who had contact with students with disabilities showed more favorable attitudes toward their presence in the classroom. Further, faculty members who have increased contact proved themselves more knowledgeable about relevant disability considerations (Aksamit, Morris, & Leunberger, 1987; Norton, 1997). In her literature review on faculty perceptions about students with disabilities in general, Rao (2004) noted that some studies found differences in attitude based on previous contact, program affiliation, and disability type, although faculty typically reported positive attitudes overall.

Other studies, however, reported that faculty held non-supportive attitudes (Miner & Prater, 1984) and that students perceived faculty as lacking sensitivity and awareness of their needs and reported a sense of intimidation and rejection (Kurth & Mellard, 2006; Wilson, Getzel, & Brown, 2000). Reports also indicated faculty were especially skeptical and mistrusting of students with non-visible disabilities such as learning disabilities, attention deficit hyperactivity disorder, and psychiatric disabilities (Beilke & Yssel, 1999; Jensen, McCrary, Krampe, & Cooper, 2004). Teachers felt students with moderate to severe disabilities made class preparation and activity difficult, and believed they needed more training on working with students with disabilities (Casebolt & Hodge, 2010).

A few studies also included opinions from college students about people with ID. Carroll, Petroff, and Blumberg (2009) interviewed teacher trainees enrolled in a college course alongside postsecondary students with intellectual disabilities. They learned these teachers-in-training enjoyed the inclusive experience and believed students with ID would successfully engage in a college course. Similarly, Griffin et al. (2012) surveyed college students about their views on postsecondary education for students with ID. Their survey occurred at a university with a postsecondary program in place and explored differences between students who interacted with students with ID and those who did not. Generally, students felt positively
about postsecondary inclusion and those with previous interactions were more positive about the abilities of students with ID. May (2012) also noted more openness to those with ID in college students enrolled in inclusive courses. Rice (2009) also studied college students’ perceptions about people with intellectual disabilities and learned that students enrolled in a special education course held more positive attitudes, regardless of college major, than did students enrolled in a political science course. Finally, Izzo and Shuman (2013) qualitatively examined beliefs of students who worked as mentors for students with ID. Participants held positive beliefs about including students with ID in PSE and noted differences between their own beliefs and actions and those who lacked previous interaction with students with disabilities. Importantly, these participants found that other college students became more comfortable with students with ID as they increased interactions with them, highlighting the need for inclusive programming. A wide range of beliefs exists about people with ID in college settings, but interaction and exposure appear to positively affect these beliefs.

What is limited in the research are opinions from university groups about college students with ID. Students with ID are just starting to arrive on college campuses due to government funding to create programs for these students. We wanted to better understand the climate of our own campus as our PSE program began. Therefore, we surveyed faculty and students on their attitudes about college-level inclusion for students with ID. Specifically, we wanted to know how comfortable faculty and students felt about having students with ID and autism on the college campus and engaging in student and class activities. In preparation for the postsecondary certificate program beginning on our campus, we also wanted to better understand the current attitude on campus about postsecondary education for students with intellectual and developmental disabilities (IDD).

Method

Participants

All participants were from a single southeastern university. The university is a public, land-grant institution with approximately 27,000 undergraduate and graduate students and 1,400 faculty members. The university has 11 colleges and over 300 degree programs and is classified as a research institution. Because a secondary goal of the research was to assess campus climate, the participants were given general information about the inclusive postsecondary program for students with intellectual disabilities coming to the campus. This information was included on the first page of the survey along with definitions of ID and autism (referred to as intellectual and developmental disabilities; IDD). Participants therefore responded based on a general understanding of an inclusive postsecondary education program for students with intellectual disabilities.

Student participants. We administered a survey to 2100 randomly selected students. A total of 499 students responded for a 23.8% response rate. Demographic information is included in Table 1. Participants were quite diverse, representing all colleges across campus and all credit levels. Nearly all (99%) students reported being full-time.

Of student participants, 88% reported previous personal contact with an individual with ID. Of those reporting contact, 68.5% indicated contact that was infrequent or less than monthly contact. Seventy percent of participants indicated previous personal contact with a person with autism. Of those, most (78.5%) reported infrequent or less than monthly contact with an individual with autism.

Faculty participants. Faculty members were contacted through their college deans, so it is unknown how many faculty members actually received the survey request. A conservative estimate based on total faculty on campus results in a response rate of 12%, for a total of 152 faculty participants. Faculty demographics are included in Table 1. Professors and instructors at all ranks participated. Most (80.3%) reported teaching at least one course per semester and on average (58.6%) had been employed by the university for 1-10 years.

Of faculty participants, 90.8% reported previous personal contact with an individual with an intellectual disability. Of those reporting contact, 75% indicated contact that was infrequent or less than monthly contact. Sixty-three percent of participants indicated previous personal contact with a person with autism. Of those, most (81.5%) reported infrequent or less than monthly contact with an individual with autism. Generally, faculty participants had very limited contact with students with ID and/or autism.

Instruments

Both the faculty and student versions of the Attitudes on Postsecondary Education for Students with Intellectual Disabilities and Autism Survey (APES-S; APES-F) were created for the purposes of this study. To build the instruments, the first two authors consulted other research on attitudes about disabilities. McConkey, McCormack, and Naughton (1983a, 1983b) were used as models for many of the Likert-type questions. This survey was originally used to examine percep-
### Table 1: Participant Demographics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
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<tr>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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<td>Other</td>
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<tr>
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<td>76</td>
<td>50</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
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<td>93.4</td>
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<tr>
<td>Other</td>
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<td>6.6</td>
</tr>
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</table>
tions of people with mental handicaps and addressed many of the attitudinal information we were seeking. Adaptations included updating wording from “mentally handicapped” to “intellectual disabilities” and revising many of the questions to better suit the needs of the survey.

The original instruments included 55 items for the APES-F and 54 items for the APES-S. In order to provide evidence of content validity, we consulted with three researchers at other universities who are experts in special education. They analyzed whether the items reflected the domains we were assessing and whether the questions were worded using nonbiased language (Whiston, 2013). Based on this review, several changes were made based on their responses. Some of the suggested changes included wording within specific questions and shortening the length of the survey by combining questions.

The student version was then piloted with 19 undergraduate and graduate students in special education and counselor education. Students were asked to complete an evaluation of the survey that included questions about clarity of survey directions and questions, length of time to complete survey, and general comments about the survey. The pilot results indicated that the directions were clear but that the survey was too long. Also, several students commented that they were confused by two of the questions, which were eliminated from the final version of the survey.

The student version was then piloted with 19 undergraduate and graduate students in special education and counselor education. Students were asked to complete an evaluation of the survey that included questions about clarity of survey directions and questions, length of time to complete survey, and general comments about the survey. The pilot results indicated that the directions were clear but that the survey was too long. Also, several students commented that they were confused by two of the questions, which were eliminated from the final version of the survey.

Based on the comments from expert review and the pilot study, the surveys were reviewed and shortened. In order to shorten the survey, we combined questions on intellectual disabilities and autism but added a detailed description of the types of students on which the study was focused. We described the postsecondary program we intended to create on campus, detailed the types of students who would participate in the program, and provided definitions of intellectual disability and autism. We also stated that all questions referred to young adults with an intellectual disability, some of whom may also be diagnosed with autism. We then repeatedly referred back to these descriptions in our actual survey questions (e.g., Students with intellectual disabilities and/or autism should be allowed to pursue postsecondary education through a certificate program such as [our program]).

The final surveys included 49 questions for the APES-F and 45 questions for the APES-S. Coefficient alpha reliabilities for the likert-type questions on the APES-F and APES-S were .90 and .80, respectively. Only the likert-type questions and demographic information were included for this article. The remaining questions were not included because they were part of a larger study.

On the APES-S, 10 demographic questions asked about year in college, gender, ethnicity, major, course load, and previous contact with people with ID or autism. The 16 likert-type questions all used a four-point scale (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree). These questions focused on the perceived impact of having students with intellectual disabilities and autism on campus and in courses and beliefs about the academic rights of and access for students with intellectual disabilities.

On the APES-F, 15 demographic questions inquired about professional title, gender, ethnicity, years at the university, academic discipline, number of courses taught, previous teaching modifications for students with disabilities, previous contact with people

<table>
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<tr>
<th>Rank</th>
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<th>28.9</th>
</tr>
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<td>Instructor/Adjunct</td>
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</tr>
<tr>
<td></td>
<td>Other</td>
<td>35</td>
<td>23</td>
</tr>
</tbody>
</table>

*Note. *Some student participants indicated more than one college level, making the total exceed 100%.
with intellectual disabilities or autism, and training on working with people with ID or autism. The 14 Likert-type questions used the same four-point scale described above (strongly disagree to strongly agree) and focused on perceived impact of having students with ID and autism in courses as well as beliefs about the impact on teaching ability and style.

Ten Likert-type questions and one demographic question were the same for both versions of the APES. The shared demographic question asked participants if, based on the definition provided about ID and our postsecondary program, they thought that students with IDD should be granted opportunities to learn at the university. The 10 shared attitude questions focused on the effects of having students with ID and autism in university courses. Examples of questions include: “Officials should not place students with IDD and students without IDD in the same university classes” and “If students with IDD were to be integrated in regular college classes, other students would lose their concentration easily.”

**Procedures**

Faculty and students came from a single university in the southeast. All surveys were completed online and were accessed through an email request for participation. All data were collected the semester before postsecondary students with ID first arrived on campus, so participants had not met any program students. For faculty participants, we contacted the deans of each college in the university asking if they would be willing to forward a participation request to their faculty. All college deans agreed, although some may not have actually forwarded the request to faculty. The participation request was then sent via email to each dean, who then forwarded the email to him or her faculty members. One follow-up email was sent to each dean, which was to be forwarded to his or her faculty members. No incentives were offered for participation. For students, a random sample of undergraduates was generated by Student Data Resources at the university. All students in the random sample were sent an email requesting their participation in the survey. Two reminder emails were also sent to these students over a period of three weeks. Students were offered an incentive to be entered into a drawing for one of three $100 gift cards; no penalties existed for not participating. All results are based on 152 faculty and 499 student responses.

**Results**

Faculty and students were asked their perceptions about the impact of postsecondary education for students with intellectual disabilities and/or autism (IDD) on a college campus. The faculty and student surveys contained shared items and items specific to the participants being surveyed. For all items, a four-point Likert-type scale was utilized (strongly disagree to strongly agree); mean scores above 2.5 indicate an above-average agreement while mean scores below 2.5 indicate a disagreement with the statement.

Student participants were asked about allowing access to campus activity centers such as the university center, library, and recreation center. On average, participants strongly agreed ($M = 3.74, SD = .58$; 96% agreed/strongly agreed) that students with IDD should be allowed access to campus activities. Generally, participants also strongly agreed ($M = 3.59, SD = .64$; 94% agreed/strongly agreed) that students with IDD should be allowed membership in college student organizations.

Two questions inquired about social interaction between college students and students with IDD. On average, participants strongly disagreed ($M = 1.37, SD = .67$; 93.5% disagreed/strongly disagreed) that students with IDD should only be allowed interaction with other students with similar disabilities. Overall, participants moderately disagreed ($M = 2.11, SD = .73$; 72.9% disagreed/strongly disagreed) that students with IDD prefer to talk and interact with other students with intellectual disabilities and autism rather than with students without disabilities.

Generally, participants strongly agreed ($M = 3.71, SD = .55$; 97.1% agreed/strongly agreed) that students with IDD should be allowed a typical and regular life. When asked if they would feel uncomfortable if students with IDD were to be integrated into regular university courses, participants overall somewhat disagreed ($M = 1.89, SD = .86$; 75.4% disagreed/strongly disagreed).

Faculty-specific questions explored the perceived effect on teaching resulting from integrating students with IDD into regular classes. In general, faculty reported a somewhat favorable view ($M = 2.84, SD = 1.01$; 64.7% agreed/strongly agreed) of modifying their teaching style to provide an equal opportunity for learning for all students, including those with IDD. On average, faculty participants somewhat believed ($M = 2.51, SD = .74$; 45.1% agreed/strongly agreed) that other university students would feel uncomfortable with having students with IDD in regular courses. Faculty participants, overall, somewhat believed ($M = 2.52, SD = .81$; 47.1% agreed/strongly agreed) that integrating students with IDD in their courses would
disturb routine educational activities. Faculty, in general, moderately believed ($M = 2.82, SD = .77$; 25.5% agreed/strongly agreed) that students with IDD would take more than their share of instructor time.

**Shared Questions**

For the shared demographic question, which asked if they thought that students with IDD should be granted opportunities to learn at the university, answers were yes (faculty = 75.2%, students = 77.8%), no (faculty = 5.9%, students = 4.8%), or not sure (faculty = 18.3%, students = 17%). Generally, both students and faculty responded positively, on average, to the idea of a postsecondary program for students with IDD on our campus.

Table 2 describes the results for the shared likert-type questions. In some cases, faculty and students agreed there was response variance in other cases. Although both groups believed that students with IDD should be allowed to pursue postsecondary education, they disagreed in some cases as to the effect this would have on university classes and students. Student participants, on average, somewhat disagreed that other students would lose their concentration or that classroom modifications would have a negative influence if students with IDD were integrated into classes, while faculty participants were more moderate in their disagreement about these statements.

**Group comparisons.** Independent sample $t$-tests, without assuming equal variances, were used to test for differences in ratings between students and faculty on the ten shared questions, differences by faculty home, and differences by level of contact with people with intellectual disabilities and/or autism. Based on the central limit theorem, normality of the sample means was ensured by the large participant sizes in this study and equal variances are not required for a simple, two-way sample comparison.

For ratings on shared questions, significant differences were found for four of the 10 questions (See Table 2), indicating some differences between student and faculty attitudes as described in the previous section. In examining differences by faculty home, the assumption was made that faculty in the College of Education who comprised 40% of participants might differ from other university faculty based on their knowledge of people with disabilities. Therefore, two groups were created, one with faculty from the College of Education and the other with all remaining faculty. Differences were examined for the 13 attitudinal questions on the faculty survey. Several statistically significant differences were found, as detailed in Table 3. Generally, faculty in the college of education were more open and accepting of having students with IDD in their courses, and believed that integration of these students would not have a negative effect on the classroom or other students.

**Discussion**

Faculty and students at a large southeastern university were surveyed about their beliefs regarding postsecondary education for students with IDD. They were asked about their comfort level with having students with IDD on campus, beliefs about postsecondary options for students with intellectual disabilities and autism, and the effects that having these students on campus would have on them and their teaching or learning. Several themes emerged from the results, each of which is discussed below.

**Beliefs About Access to Postsecondary Education**

Faculty and students were generally positive about the idea of postsecondary education (PSE) for students with IDD. This study supports previous work by Aksamit et al. (1987) and Norton (1997), who concluded faculty members who had contact with students with disabilities showed attitudes that were more favorable. Most faculty and students surveyed reported having a previous personal contact with a person with IDD. Most believed a postsecondary program serving students with IDD should exist and the majority believed the study site was a suitable campus to offer these services. Similarly, faculty and students disagreed that students with IDD should be relegated to special schools to continue their education. Still, nearly one-fifth of students and faculty were unsure about having postsecondary options on their campus. These results generally suggest that the atmosphere is positive regarding offering postsecondary programs on traditional college campuses, at least for the campus we surveyed.

In addition, this study supports previous research about examining college student beliefs about PSE for students with IDD. Student participants stated their strong belief that students with IDD be allowed a typical and regular life, which seems to include access to postsecondary opportunities. Griffin et al. (2012) also indicated that students felt positively about postsecondary inclusion. Student participants also believed that students with IDD would enjoy interacting with students with and without disabilities, rather than just students with disabilities.
### Table 2

*Shared Likert-Type Questions*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Students with intellectual disabilities and autism (IDD) should be allowed to pursue postsecondary education through a certificate program.</strong></td>
<td>Fac</td>
<td>152</td>
<td>3.16</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>3.30</td>
<td>.93</td>
</tr>
<tr>
<td><strong>2. Classroom and curricular modifications made on behalf of students with IDD will have no influence on other students in the classroom.</strong></td>
<td>Fac</td>
<td>152</td>
<td>2.25</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>2.38</td>
<td>.91</td>
</tr>
<tr>
<td><strong>3. Officials should not place students with IDD and students without IDA in the same university classes.</strong></td>
<td>Fac</td>
<td>152</td>
<td>2.11</td>
<td>.92</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>2.48</td>
<td>.9</td>
</tr>
<tr>
<td><strong>4. Individuals with IDD should be allowed to continue their education only at special schools.</strong></td>
<td>Fac</td>
<td>152</td>
<td>1.79</td>
<td>.82</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>1.87</td>
<td>.78</td>
</tr>
<tr>
<td><strong>5. Classroom and curricular modifications made on behalf of students with IDD will have a positive influence on other students in the classroom.</strong></td>
<td>Fac</td>
<td>152</td>
<td>2.72</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>2.58</td>
<td>.78</td>
</tr>
<tr>
<td><strong>6. If students with IDD were to be integrated in regular university/college classes, students with intellectual disabilities and autism would need more attention than other students.</strong></td>
<td>Fac</td>
<td>152</td>
<td>3.23</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>3.20</td>
<td>.66</td>
</tr>
<tr>
<td><strong>7. If students with IDD were to be integrated in regular college classes, other students would lose their concentration easily.</strong></td>
<td>Fac</td>
<td>152</td>
<td>2.07</td>
<td>.74</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>2.37</td>
<td>.86</td>
</tr>
<tr>
<td><strong>8. Classroom and curricular modifications made on behalf of students with IDD will have a negative influence on other students in the classroom.</strong></td>
<td>Fac</td>
<td>152</td>
<td>2.11</td>
<td>.86</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>2.32</td>
<td>.86</td>
</tr>
<tr>
<td><strong>9. If students with IDD were to be integrated into regular college classes, it would give students with IDD a better chance to prepare themselves for life.</strong></td>
<td>Fac</td>
<td>152</td>
<td>3.22</td>
<td>.80</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>3.25</td>
<td>.74</td>
</tr>
<tr>
<td><strong>10. If students with IDD were to be integrated in regular classes, other students would learn how to communicate with and interact with individuals with disabilities better.</strong></td>
<td>Fac</td>
<td>152</td>
<td>3.27</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>Stu</td>
<td>499</td>
<td>3.44</td>
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Table 3

*Differences by Faculty College Home*

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<tr>
<th></th>
<th>Faculty Home</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I agreed to having a student with IDD in my class, I would be open to modifying my teaching/learning style to provide that student an equal opportunity for learning.</td>
<td>Other</td>
<td>98</td>
<td>2.67</td>
<td>1.01</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>54</td>
<td>3.15</td>
<td>.94</td>
<td></td>
</tr>
<tr>
<td>2. Classroom and curricular modifications made on behalf of students IDD will have no influence on other students in the classroom.</td>
<td>Other</td>
<td>98</td>
<td>2.11</td>
<td>.95</td>
<td>.018*</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>54</td>
<td>2.50</td>
<td>.97</td>
<td></td>
</tr>
<tr>
<td>3. Officials should not place students with IDD and students without IDD in the same university courses.</td>
<td>Other</td>
<td>98</td>
<td>2.32</td>
<td>.93</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>54</td>
<td>1.72</td>
<td>.79</td>
<td></td>
</tr>
<tr>
<td>4. Classroom and curricular modifications made on behalf of students with IDD will have a positive influence other students in the classroom.</td>
<td>Other</td>
<td>98</td>
<td>2.51</td>
<td>.78</td>
<td>.000*</td>
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<td></td>
<td>Education</td>
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<td>3.09</td>
<td>.71</td>
<td></td>
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<tr>
<td>5. If students with IDD were to be integrated in regular college courses, other students would lose their concentration easily.</td>
<td>Other</td>
<td>98</td>
<td>2.16</td>
<td>.77</td>
<td>.029*</td>
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<td></td>
<td>Education</td>
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<td>1.89</td>
<td>.66</td>
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<tr>
<td>6. Classroom and curricular modifications made on behalf of students with IDD will have a negative influence on other students in the classroom.</td>
<td>Other</td>
<td>98</td>
<td>2.29</td>
<td>.86</td>
<td>.000*</td>
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<tr>
<td></td>
<td>Education</td>
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<td>1.78</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>7. If students with IDD were to be integrated in regular university/college courses, other students would learn how to communicate with and interact with individuals with disabilities better.</td>
<td>Other</td>
<td>98</td>
<td>3.16</td>
<td>.67</td>
<td>.006*</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>54</td>
<td>3.46</td>
<td>.57</td>
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</tbody>
</table>

*Note.* IDD = Intellectual disabilities and/or autism/developmental disabilities. Other = faculty not a member of the College of Education  * = significant difference >.05
Beliefs about Effects on Classroom

Faculty and students had mixed beliefs about the effects on the classroom if students with IDD were to be integrated into regular classrooms. Student participants disagreed that traditional college students would feel uncomfortable if students with IDD were integrated into their courses. This finding supports more openness to college students with ID enrolled in inclusive courses (May, 2012). This belief also supports earlier findings that younger people or college-age students tend to express more positive views about people with IDD (Carroll et al., 2009; Griffin, et al., 2012).

Faculty responses were less strong, however, indicating their belief that traditional students might feel uncomfortable if students with IDD were in their courses. The responses from faculty regarding the effects on classroom routine should students with IDD be integrated into regular courses were varied. The average faculty response is a slight agreement that this would disturb the class routine and that students with IDD would take more instructor time than would traditional students. Previous research (Engelbrecht, Oswald, Swart, & Eloff, 2003) highlighted faculty concerns about including students with IDD in regular education classrooms. They found teachers were moderately stressed about inclusion, with the most stress resulting from accountability standards, curriculum adaptation, sustaining active learning, lack of training, and difficult student behaviors. It is possible some mixed feelings about postsecondary access may be related to perceived feelings of stress about interacting with students with intellectual disabilities and autism.

Faculty participant responses indicated some concern with the success and failure of students with IDD. These results mirror other studies of attitudinal beliefs regarding other types of disabilities. In previous studies, faculty members indicated they had concerns about students with disabilities in their classrooms and on their campuses. Research indicated faculty members were (a) concerned about the absorption of time and resources students with disabilities demand (Kaufman, 2006; Tyre, 2007), (b) concerned about classroom modifications (Waterfield, West, & Parker, 2006), and (c) concerned about whether or not students with disabilities can be successful in postsecondary education (Becker, Martin, Wajeel, Ward, & Shern, 2002). Nevertheless, our participants expressed a readiness to learn more about what it would be like to have these students on campus.

Both faculty and student responses indicated they believed students with IDD would require more attention than other students, but did not respond that this would cause other students to lose their concentration in the classroom. Participants reported uncertainty as evidenced by middling responses to each question. It seems that faculty and students are unsure what the effects on other students might be, but they are generally willing to try integration of students with IDD into university courses.

Beliefs about Impact on Campus

Faculty and students also reported mixed responses about the impact students with IDD would have on the campus community. Student participants generally agreed that students with IDD should be allowed access to campus activities, including membership in college organizations and admittance to recreation facilities. Student participants also strongly agreed that having students with IDD on campus would help other students learn to interact with students with disabilities better. Again, faculty responses were less strong, suggesting concerns about the effect that students with IDD would have on other college students. These results relate to other attitudinal research, with some findings indicating faculty hold positive attitudes toward students with disabilities (e.g., Bigaj et al., 1999; Leyser et al., 1998; Vasek, 2005; Vogel et al., 2008) while others report less supportive attitudes (Minner & Prater, 1984). Clearly, faculty members represent a diversity of perspectives about having students IDD on campus.

Conclusions and Implications

As with all research, some limitations to our study exist. This research was limited based on the response rates of participants and the interest of the participants in taking the time to complete the survey. Other limitations outside the control of the primary researchers included a lack of participation by faculty members and student participants. While not exhaustive, these limitations could affect generalizability of the results. First, all participants came from a single college campus, so generalizability may be limited. Second, participants were asked to respond regarding students with intellectual disabilities and autism. Results may differ if the disability categories were parceled-out and participants were only asked, for example, about students with ID. Third, all data comes from self-report of personal attitudes, so the actual behaviors of faculty and students may differ from their reported beliefs. Also, participants self-selected to complete the survey; it may be that those who chose to participate are not representative of typical college students and faculty. Finally, the survey was created solely for this study and, although it was based on previous attitudinal research, it is not possible to know if the survey truly examined attitudes and beliefs.
Implications

As the number of PSE programs increase, faculty at PSE universities and colleges need training regarding college students with IDD in order to maximize learning opportunities and experiences. Faculty members are responsible for instruction and the implementation of accommodations to support students with intellectual disabilities. Further, their perceptions affect students. Therefore, understanding how faculty members feel about students with intellectual disabilities is important. As mentioned by McKeon, Alpern, and Zager (2013), faculty need to learn ways to increase curriculum accessibility for students with ID. The HEOA (2008) includes ideas for increasing success for students with ID in PSE. For example, it mentions the use of Universal Design for Learning (UDL), a framework for instructors to ensure that information is presented in a flexible manner that engages students and allows varied opportunities to demonstrate knowledge, skills, and competencies. Faculty would benefit from training sessions to become aware of and to develop successful accommodation strategies.

Facilitating access and mitigating discrimination on college campuses can prove difficult. Faculty and instructors do support college students with IDD but are unclear about their classroom performance. It was evident that support from faculty members was not without concern or reservation; however, the majority of faculty members indicated that they did not mind making accommodations or modifying their teaching style to provide an equal opportunity for learning for students with IDD. Offices of Disability Services and Diversity and Equity, as well as campus centers charged with improving teaching practices for instructors, are services and resources that already exist on most university and college campuses. The support for college students with IDD would align with their mission statements.

As college students with intellectual disabilities increase on university and college campuses, students without ID also will require training and opportunities to work with and interact with students with ID. Some students may have never interacted with a person with an intellectual disability and may express ambivalence or negative feelings. As noted by Izzo and Shuman (2013), increased comfort and acceptance by college students occurred when they were introduced to and interacted with students with ID. Students should be provided structured opportunities to work and interact with diverse students in order to adequately prepare them to engage in a diverse global society. Student clubs and organizations on college campuses provide a natural means to facilitate such opportunities.

Future Research

More studies are needed on the beliefs about, and actual impact of, postsecondary programs for students with IDD. Future studies could focus on faculty and students from multiple schools so that generalizability could be increased. In addition, longitudinal studies are needed to determine if attitudes change once a postsecondary program for students with ID is started on campus. It would be important to know if attitudes changed, as well as exploring what the actual impact on classes and campus were once the program existed. Future research also should separate students with ID and students with autism. Respondents may possess differing beliefs and attitudes that are disability specific. Lastly, future research would also benefit from examining the success of these students in completing postsecondary programs and by examining the relationship between success levels and attitudes of faculty and students.

Although the results of this study need to be replicated, our findings suggest that university students and, to a lesser degree, faculty favor the development of PSE programs, the inclusion of college students with IDD in classroom, and the inclusion of college students with IDD in campus activities and events. As previous research has noted, interactions with individuals with disabilities changed a person’s attitudes and beliefs in a positive manner (Aksamit et al., 1987; Norton, 1997). Therefore, as more PSE programs develop and people are provided more opportunities to interact with individuals with intellectual disabilities and autism, overcoming misperceptions and encouraging positive change will be more likely.
References


Doyle, M. B. (2003). 'We want to go to college too": Supporting students with significant disabilities in higher education. In D. L. Ryndak & S. Alper (Eds.), *Curriculum and instruction for students with significant disabilities in inclusive settings* (pp. 307). Boston: Pearson Education.


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Self-Disclosure Decisions of University Students with Learning Disabilities

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Abstract
The number of students with learning disabilities (SLD) at postsecondary institutions has tripled over the past three decades and now constitutes about 11% of undergraduate students (Joyce & Rossen, 2006; U.S. Department of Education, 2013). Research has found that SLD who use accommodations at their postsecondary institution are more successful in university than those who do not (Denhart, 2008; Skinner, 1999). Yet, research suggests that SLD do not request accommodations at expected levels (Wagner, Newman, Cameto, Garza, & Levine, 2005). This study’s purpose was to investigate differences in psychological attitudes and factors between SLD who disclose and who do not disclose. In addition, the study examined what factors SLDs consider when deciding if they will self-disclose their disability to university personnel. To achieve these goals, 31 undergraduate students with learning disabilities completed a mixed methods study comprised of quantitative scales (The Self-Determination Scale [SDS], the Attitudes Towards Requesting Accommodations Scale [ATRA], and the Revised Self-Disclosure Scale [RSDS]). Fifteen of these participants then were invited to complete a 30 minute semi-structured interview. Results indicate that the total scores on the ATRA, SDS, and the RSDS were significantly different between the groups of students who chose to disclose and those who did not. In addition, data from student interviews uncovered nine factors that students indicated influenced their decision to disclose and how deeply they disclosed.

Keywords: Learning Disability, accommodations, disclosure, university

Many high school graduates with disabilities enter postsecondary institutions at a disadvantage. On average, students with learning disabilities (SLD) have significantly more difficulty with academic skills including knowledge of how to prepare for and take academic tests, scanning of text material in order to locate specific answers, monitoring of errors in written material, taking notes from lectures, listening for comprehension, managing anxiety, processing of information, and self-testing than their peers without disabilities (Carlson & Alley, 1981; Reaser, Prevatt, Petscher, & Proctor, 2007). Despite this, 52.8% of students with disabilities (SWD) report that they want to attend a four-year postsecondary institution (Wagner, Newman, Cameto, Garza, & Levine, 2005).

In spite of their relative lack of preparation, SLD’s attendance at postsecondary institutions has increased substantially over the past thirty years (Joyce & Rossen, 2006). In 2008, 11% of the national population of students attending postsecondary institutions in the United States identified as having a learning disability (U.S. Department of Education, 2013). There are many reasons why SLD may be able to gain admittance to postsecondary institutions but have difficulty once they enroll. Many SLD have trouble navigating the postsecondary environment for reasons including challenging faculty interactions (e.g., difficulty accessing faculty and inadequate faculty knowledge about LD), difficulty receiving accurate information from their institution (e.g., information regarding scholarships and course requirements), poor self-advocacy (Field, Sarver, & Shaw, 2003), and academic difficulties (e.g., problems reading course materials and poor working memory; Mason & Mason, 2005).

In addition, the covert nature of learning disabilities may lead some SLD to struggle in obtaining a bachelor’s degree. Learning disabilities are “hidden disabilities,” so named because they “are less visible than other physical, sensory, or mobility impairments and thus may not be as readily apparent to the observer” (Wolf, 2001 pp. 387). For example, a professor or administrator is not able to recognize a SLD as she might a student affected by blindness or physical impairments. The conspicuousness of a
student’s disability is important because, in the postsecondary education setting, accommodation access is built upon the concept of visibility. Postsecondary students with a disability must request accommodations for their disability from the disability services (DS) office on campus. Once these students receive accommodations through the university, they may be required to reveal their disability to their professors. It is only through disability self-disclosure that students can utilize course accommodations.

The accommodations protocol places SLD in a unique position. They are able to make a conscious decision to self-disclose their disability to their postsecondary institution, faculty, classmates, and university staff in order to receive and utilize accommodations or they can choose to remain hidden and forgo disability services. Even if SLD do decide to self-disclose their disability, they may still have difficulty using their accommodations in class, as research has shown that many professors’ willingness to provide accommodations is based on how disabled a student appears (Rao & Gartin, 2003). Therefore, SLD who chose to reveal their disability to obtain institutional accommodations may still have difficulty utilizing those accommodations in a classroom setting (Rao & Gartin, 2003). It is thought that psychological factors and attitudes such as levels of self-determination, willingness to self-disclose, and attitudes towards accommodations may be elements that contribute to differences in SLD outcomes.

There are many examples of successful SLD, indicating that psychological elements can mitigate some of the obstacles SLD face in the postsecondary environment. For example, many of the characteristics possessed by academically successful postsecondary SLD are linked to high levels of self-determination (Sarver, 2000). Overall, SLD exhibit lower levels of self-determination and its characteristic components such as intrinsic motivation, competency, and autonomy compared to students without disabilities.

According to Deci and Chandler (1986), environments with little control and large amounts of freedom encourage the development of autonomy, supporting self-determination. However, students with LD often are given little freedom to control their environment within the educational setting (Yuen, 2001). This makes sense as SLD who are served within Special Education typically participate in more structured learning methods than their general education counterparts. This high level of control is not only seen within the classroom, but also at students’ homes. Ryan and Grolnick (1986) found that the parents of children who were identified by teachers as having learning problems were also more controlling than parents of children not identified as having learning issues. These higher levels of controlling behavior lead to lower self-esteem, intrinsic motivation, and less competence exhibited by students with learning difficulties (Ryan & Grolnick, 1986).

Students with learning disabilities also are at risk of having lower levels of perceived competence, another factor in cultivating self-determination. According to Izzo and Lamb (2002), students need to know they have control over their actions and that their efforts are effective to develop self-determination. Positive feedback has repeatedly been shown to increase intrinsic motivation (Ryan, 1982). Yet SLD may have great difficulty realizing the efforts of their work in the educational setting. They are also more likely to perceive that their academic outcomes are controlled by others (Grolnick & Ryan, 1990). It is not surprising, then, that research has shown that SLD are lower in perceived academic competence and intrinsic motivation than their nondisabled peer groups (Zisimopoulos & Galanaki, 2009). In fact, Deci, Hodges, Pierson, and Tomassone (1992) found that high school SLDs' perceived competence is a central predictor of adjustment to and achievement within the academic environment.

Overall, SLD generally show lower levels of autonomy, competence, as well as other internal motivation variables that contribute to self-determination than their general education counterparts. Yet, research has shown that SLD who are more internally motivated act autonomously, engage in self-regulating behavior, react to and respond to events in an empowered manner, and act in a self-realizing manner (Wehmeyer & Palmer, 2000). Students who exhibit these characteristics should be more likely to adjust well to the college educational and accommodation process. This is due, in part, to overcoming difficulties associated with obtaining accommodations such as self-disclosure. These students are theoretically better prepared to act independently and deliberately when navigating the accommodations process than their counterparts who have low levels of self-determination.

In order to utilize accommodations in many postsecondary institutions, SLD must self-disclose their disability during at least one point in time to the DS office. Many SLD must also disclose a second time to their professors to utilize course accommodations; however, in some institutions the second disclosure to faculty is performed automatically by DS staff with the student’s permission. Often times self-disclosure is not limited to just these one or two time points, but happens multiple times throughout a student’s postsecondary career. For example, SLD may have
to self-disclose to teaching assistants who proctor exams, Deans of Students and advisors when developing courses of study, registration staff if priority registration is an accommodation, and other students either passively (e.g., a classmate notices a student using the accommodation of a calculator on an exam) or actively (e.g., when working on group projects).

A SLD’s willingness to self-disclose is another psychological element that has been identified as being important in obtaining accommodations. Surprisingly, only 40% of SWD who utilized special education services in secondary school disclose their disability to their college or university. Of these students, 88% then go on to receive services from their DS office (Newman, 2005). Lynch and Gussel (1996) hypothesized that when SLD make the decision to self-disclose their disability to their university they may, intentionally or not, weigh the benefits and drawbacks to their self-disclosure. Research has found that college SWD take four factors into account when deciding if they will request accommodations. These factors are: (a) academic integrity, defined as the attitudes associated with requesting accommodations (e.g., “I have never felt like I needed accommodations” and “accommodations are for academically weaker students”; Barnard-Brak, Sulak, Tate, & Lechtenberger, 2010, p. 35); (b) disability disclosure, defined as attitudes towards disclosing a disability to obtain accommodations (e.g., “I don't like to admit that I have a disability” and “The cost of talking about my disability to get accommodations outweighs the benefits”; Barnard-Brak, Sulak, et al., 2010, p. 35); (c) disability acceptance, or attitudes associated with personal acceptance of disability and use of accommodations (e.g., “I prefer to be treated as a non-disabled person” and “I don't think I am disabled enough to need accommodations”; Barnard-Brak, Sulak, et al., 2010, p. 35), and (d) the accommodations process, or attitudes about requesting accommodations and navigating through the accommodations process (e.g., “I don’t trust Student Services to keep my information confidential” and “I didn’t know anything about disability accommodations when I started college” [Barnard-Brak, Sulak, et al., 2010, p. 35]).

According to Lynch and Gussel (1996), students who need accommodations to succeed in their postsecondary institutions should be willing to self-disclose their disability more readily than those students who feel that they do not need accommodations to be successful at their postsecondary institutions. Students with more negative views surrounding these four accommodations areas (i.e., higher scores on the Attitudes Towards Requesting Accommodation Scale [ATRA]), were less likely to request accommodations and had poorer academic outcomes than SWD who had more favorable views of accommodations (i.e., scored lower on the ATRA; Barnard-Brak, Sulak, et al., 2010). Based on the above research, self-determination, willingness to disclose, and attitudes towards accommodation may work in concert to affect SLD’s decisions to pursue accommodations.

Although research has investigated these psychological elements individually, they have never been quantitatively combined into disability disclosure research. Furthermore, these components have not been explored for SLD, particularly those in a top-ranked institution of higher education. The combination of the psychological factors and attitudes may help explain SLD decisions to disclose. Thus, the current study was designed to answer two questions:

1. Are there differences in levels of self-disclosure, self-determination, and attitudes towards requesting accommodations between two disclosure groups (i.e., no disclosure [Level One Disclosure] and disclosure to professors in the classroom setting [Level Three Disclosure])?

It was hypothesized that students who choose to obtain accommodations will have higher levels of the psychological attitudes and factors than those students who choose not to obtain accommodations; and

2. What self-identified factors do SLD think are important to consider when deciding if they will disclose to university personnel?

The second part of this study utilized qualitative interviews to determine student-identified factors that influence their self-disclosure decisions.

Methods

Study Participants

Study participants were 31 SLD who were enrolled at a large, ethnically diverse, public Research One University in the southern part of the United States (University). The University is highly selective in its student admissions process. Students who are in the top 10% of their class have automatic acceptance to a state university, including the study site. In 2008, 81% of students at the University were admitted under the 10% rule, with a mean GPA of 3.08 and mean SAT of 1219. Therefore, the study sample was composed of only high achieving SLD, or those who entered the University under their standard admissions process. Study participant demographics are shown in Table...
1. Eligible SLDs were recruited at the beginning of three semesters, from the Educational Psychology Department Subject Pool at the University (i.e., students enrolled in Individual Learning Skills, Human Sexuality, Adolescent Development, or Introduction to Statistics courses). Subject pool participants represent diverse major areas of study including, but not limited to, government, fashion, education, kinesiology, communication, chemistry, nursing, computer science, etc. Students enrolled in a Subject Pool course must either participate in research studies or complete an alternate essay assignment to receive course credit.

Students who participated in this study met several eligibility criteria. First, participants were undergraduate students. Second, participants were at least sophomores and were matriculated at the University for at least one year (transfer students were excluded). Third, participants primarily had a diagnosed learning disability. Diagnosis of learning disability was based on self-report; no documentation of disability was requested by the researchers. Individuals with co-morbid diagnoses were allowed to participate as long as the diagnosis was secondary to their learning disability and was appropriately managed. Secondary diagnoses were determined by answers to two specific questions on the study survey, “Do you currently have any additional disabilities, conditions, or diagnoses that may affect your college learning experience (e.g., ADHD, depression, physical impairments, etc.)?” and “If you do have additional disabilities or diagnoses, are they appropriately managed and how (e.g., ADHD managed by medication or Depression managed by medication/therapy)?” Determination as to if conditions were appropriately managed were determined both by participant determination (i.e., a participant indicated “yes” when asked if their secondary condition was appropriately managed) and by participant description of an appropriate method of management for that condition (i.e., medication for ADHD or therapy and/or medication for depression). Participants who did not meet all inclusion criteria were excluded. In addition, participants who were not accepted to the University through the typical application method, such as scholarship athletes and transfer students, were excluded.

Procedure
Participants were screened for eligibility at the beginning of each current school semester using an Educational Psychology Research Pool Screener. Those students who responded “yes” to a screener question of “Do you have a learning disability?” were invited to participate in the study. Invited Participants were then emailed a link that allowed them to complete the 20 minute quantitative survey components of the study. The survey was administered online through Qualtrics at http://www.Qualtrics.com/.

The Qualtrics survey was comprised of three parts: demographic information; information regarding level of disclosure and accommodation usage; and the quantitative study measures that measured the three psychological factors being examined in the study, which included attitudes towards accommodations (i.e., ATRA), self-disclosure (i.e., the Revised Self-Disclosure Scale [RSDS]), and self-determination (i.e., the Self-Determination Scale [SDS]). Demographic information included: (a) type(s) of learning disability (e.g., language, reading, writing, and math); (b) age of diagnosis of learning disability; (c) cumulative GPA; and (d) University major. This information was collected using checklist, multiple choice, and fill-in-the-blank formats. Levels of disclosure and accommodations usage were collected using descriptive measures. These sections were followed by the three quantitative scales used in the study: the SDS (Sheldon & Deci, 1993), the RSDS (Wheeless, 1978), and the ATRA (Barnard-Brak, Sulak, et al., 2010).

The SDS is a short, 10-item scale, with two five-item subscales designed to assess individual differences in the extent to which people tend to function in a self-determined way. The scales have good internal consistency with alphas ranging from .85 to .93 and adequate test-retest reliabilities (\(r = .77\); Sheldon, Ryan, & Reis, 1996). The SDS was ultimately chosen for use in this study because of its shorter length when compared to other self-determination scales, good psychometric properties, and alignment with Deci and Ryan’s Self-Determination Theory.

The RSDS is a self-disclosure questionnaire that is (a) topic free and (b) able to measure a wide range of potential dimensions of self-disclosure. It is composed of 31 items and scored on a seven-point Likert scale. Other researchers who have used the revised scale (e.g., Stacks & Stone, 1984; Wheeless, Nesser, & McCroskey, 1986) have reported coefficient alphas ranging from \(\alpha = .81\) to .91. Additional studies (Wheeless & Grotz, 1976; Wheeless et al., 1986; Wheeless, 1978) also confirm both the content and the construct validity of the scales. A confirmatory factor analysis was conducted using principal components. Factor loadings for each dimension were found to be between .75 - .87. These values signify that the factors accurately portray the scale items, suggesting that the questionnaire’s model is valid (Wheeless, 1976). This scale was chosen for the study because the topic free nature of the measure ensured that the questions
Table 1

Demographic Information

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15 (48%)</td>
</tr>
<tr>
<td>Female</td>
<td>16 (52%)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>24 (77%)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7 (33%)</td>
</tr>
<tr>
<td>Native Language</td>
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</tr>
<tr>
<td>English</td>
<td>30 (97%)</td>
</tr>
<tr>
<td>Spanish</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>Participant Learning Disability</td>
<td></td>
</tr>
<tr>
<td>Reading</td>
<td>26 (84%)</td>
</tr>
<tr>
<td>Writing</td>
<td>14 (45%)</td>
</tr>
<tr>
<td>Math</td>
<td>7 (23%)</td>
</tr>
<tr>
<td>Language</td>
<td>18 (58%)</td>
</tr>
<tr>
<td>Other</td>
<td>20 (65%)</td>
</tr>
<tr>
<td>Other Disabilities</td>
<td></td>
</tr>
<tr>
<td>ADHD</td>
<td>19 (61%)</td>
</tr>
<tr>
<td>Depression</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>Anxiety Disorder</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>Grade Received Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Kindergarten-3rd</td>
<td>10 (32%)</td>
</tr>
<tr>
<td>4th-6th</td>
<td>10 (32%)</td>
</tr>
<tr>
<td>7th-9th</td>
<td>3 (10%)</td>
</tr>
<tr>
<td>10th-12th</td>
<td>2 (7%)</td>
</tr>
<tr>
<td>College</td>
<td>6 (19%)</td>
</tr>
<tr>
<td>Year in College</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>5 (16%)</td>
</tr>
<tr>
<td>Junior</td>
<td>12 (39%)</td>
</tr>
<tr>
<td>Senior</td>
<td>14 (45%)</td>
</tr>
<tr>
<td>GPA</td>
<td>4.0-3.5</td>
</tr>
<tr>
<td>3.5-4.0</td>
<td>4 (13%)</td>
</tr>
<tr>
<td>2.5-3.49</td>
<td>22 (71%)</td>
</tr>
<tr>
<td>1.5-2.49</td>
<td>4 (13%)</td>
</tr>
<tr>
<td>1.0-1.49</td>
<td>1 (3%)</td>
</tr>
</tbody>
</table>
remained relevant within an educational setting. Second, previous studies have successfully used this scale to examine the connection between disclosure and successful participant outcomes in other areas apart from educational settings (Lai-ye & Leung, 2006; McCroskey & Richmond, 1977).

The ATRA is a 32-item Likert style scale with responses ranging from one (strongly agree) to five (strongly disagree) that was specifically designed to address SWD’s attitudes towards disclosing to request accommodations. Previous studies (Barnard-Brak, Sulak, et al., 2010) have indicated that the ATRA has an acceptable level of internal consistency, yielding a coefficient alpha of .91. Additionally, a four factor model based on the Barnard-Brak, Sulak, et al. (2010) research also seems to accurately reflect collected data ($\chi^2$/df ratio = 3.24, NNFI value = .93). The scale was chosen for the study because of its good psychometric properties and for its ability to specifically address SWD’s attitudes towards disclosing to request accommodations.

The dependent variables of this study were the total scores on the SDS, RSDS, and the ATRA. Quantitative data was analyzed utilizing a one-way fixed effects multivariate analysis of variance (MANOVA). Two-tailed univariate and multivariate measures were used to describe the entire sample as well as to compare the methods of self-disclosure for the demographic and psychological (dependent) variables. Additionally, to obtain views about disclosure to faculty and DS staff, a convenience sampling of the first 15 students who completed the quantitative survey, five from each disclosure group, were asked to participate in a 30 minute semi-structured interview with the researcher. The semi-structured questions were expanded and modified versions of questions used in a previous study of self-disclosure in students with disabilities (Barnard-Brak, Lechtenberger, et al., 2010). Interviews were conducted over Skype v5.5 and audio recorded onto the Researcher’s personal computer using MP3 Skype Recorder software. Qualitative data collected for this study were then transcribed into a Microsoft Word document and organized by participant.

The DS office at the University in which the study took place does not automatically disclose DS enrollment of students to professors. Therefore, the original study proposal called for three disclosure levels: no disclosure (Level One), DS only disclosure (Level Two), and DS and classroom disclosure (Level Three). However, as research progressed it became clear that no students identified as belonging to the Level Two disclosure group. Therefore, this group was removed from the quantitative study’s independent variables.

Instead, five interviews each were collected from: students who did not disclose their disability to the University and as a result were not eligible to access accommodations (i.e., Level One Disclosure); students who both accessed and utilized their accommodations by registering with the University DS office and then self-disclosing their disability to their professors by presenting them with their official DS registration letter (i.e., Level Three-A Disclosure); and students who both accessed and utilized their accommodations by registering with the University DS office and then self-disclosing their disability to their professors by presenting them with their official DS registration letter and by speaking with them at length about their individual learning differences (i.e., Level Three-B Disclosure). Students’ membership in the Level Three-A or -B group was preliminarily determined through e-mail when the Researcher scheduled the interview. In the scheduling e-mail the researcher requested that each participant describe how they disclosed to faculty by asking, “When requesting accommodations from a professor do you just give your accommodation letter to your professors or do you discuss how you disclosed to faculty?” Preliminary group assignment was made based on participant response. Group assignment was confirmed after the interview, with students assigned to the Three-B group having to explicitly indicate how they discussed their disability with their professors and provide examples of such conversations during the interview. Students who indicated during the interview that they only handed their letter of accommodation to their professor and very briefly indicated their disability (i.e., “Here’s my letter of accommodation; I have dyslexia”) or could not provide examples of specific in-depth discussions with their professors were assigned to the Three-A group.

Data from the qualitative semi-structured questions were analyzed by two trained research assistants who were blind to the participants’ disclosure level. These research assistants utilized the constant comparative method (Corbin & Strauss, 2008) to analyze data. The research team analyzed their transcripts by assigning code map codes. After an initial round of coding, research assistants and the researcher jointly combined codes that represented similar constructs into overarching concepts used to anchor interpretation of findings in this study. The coders were assessed for intra-coder reliability utilizing percent agreement. In this study, initial percent agreement before reconciliation averaged 75%. Final percent agreement reached 100% after reconciliation of differences. Remaining codes and concepts that were found in over 50% of the participants’ responses (i.e., at least eight) were
<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># Participants Who Mentioned Code</td>
<td># Participants Who Mentioned Code</td>
<td># Participants Who Mentioned Code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Knowledge of Accom.</td>
<td>0</td>
<td>15</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demeanor of Professors</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Experience with SSD</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Experience with Professors</td>
<td>3</td>
<td>2</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Experience with Classmates</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Academics</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Self-Awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need/Do Not Need Accom.</td>
<td>2</td>
<td>10</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>View of Disability</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Supports</td>
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<td>Coping Mechanisms</td>
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<td>1</td>
<td>13</td>
<td>1</td>
</tr>
</tbody>
</table>

*Figure 1. Total Participants Discussing Code and Frequency of Positive and Negative Codes by Group.*
considered to be major factors or themes that affect disability disclosure. Please see Table 2 for a code map that resulted from the data analysis.

Results

Quantitative Results

A one-way between groups MANOVA was performed to investigate the first research question: are there differences in levels of self-disclosure, self-determination, and attitudes towards requesting accommodations between the two disclosure groups (i.e., no disclosure [Level One Disclosure] and disclosure to professors in the classroom setting [Level Three Disclosure])? The omnibus MANOVA indicated a non-directional statistically significant difference on combined dependent variables: $F(3, 27) = 8.50, p = .000$; Pillari’s Trace = .994; partial eta squared = .486. When the results for the dependent variables were considered separately, all three psychological factors reached statistical significance ($p = .05$): attitude towards accommodations ($F(1, 29) = 23.14, p = .000$, partial eta squared = .444), self-determination ($F[1, 29] = 5.97, p = .021$, partial eta squared = .171) and self-disclosure ($F(1, 29) = 5.55, p = .025$, partial eta squared = .161). An inspection of mean scores (see Table 3) indicated that the No Disclosure Group (Level One) reported higher scores ($M = 107, SD = 4$) and therefore worse attitudes towards requesting accommodations than the Disclosure group (Level Three; $M = 81, SD = 3$).

Overall, Level One SLD reported lower levels of self-determination achieving an average score of 7.84 points out of a maximum of 14.00 points ($SD = 1.48$) than Level Three students ($Mean = 9.65, SD = 1.99$). Level One SLD also reported lower levels of self-disclosure achieving a mean score of 120.88 out of a possible 217 points ($SD = 5.50$) than Level Three SLD ($Mean = 135.86, SD = 3.39$).

Qualitative Results

A qualitative analysis of interview data was performed to investigate the second research question: what self-identified factors do SLD think are important to consider when deciding if they will disclose to university personnel? After coding and analysis of participant interviews, nine major codes arose that were combined into four themes outlined in Table 2. Differences were observed in the number of participants per disclosure group who mentioned specific codes in their interviews as well as the proportion of positive/negative characterization of codes mentioned by disclosure group (see Figure 1).

No Disclosure Group

The No Disclosure Group had multiple findings that distinguished them from the Disclosure groups (i.e., Letter Only Disclosure group and Letter and Conversation Disclosure group). First, poor knowledge of accommodations seemed to be an important differentiating code between the No Disclosure group and the Disclosure groups. Overwhelmingly, individuals who chose not to disclose made negative Knowledge of Accommodation statements. These statements indicated that they did not have accurate information about the accommodations available at the University and the process by which one applies for accommodations. For example, one No Disclosure student remarked, “[I didn’t get] help because I didn’t feel like my problems would qualify compared to people who were blind or deaf.” This student mistakenly thought that his learning disability would not be “serious” enough to qualify for institutional accommodations and, as a result, he never pursued them.

Second, the No Disclosure group had an overwhelmingly negative View of their Disability compared to the other two Disclosure groups. No Disclosure students made many more negative comments surrounding their disability than the other two Disclosure groups. These students described their disability as “a stigma,” “excuse,” “problem,” and “handicapping” and described thinking of themselves as a sellout or becoming uncomfortable at the thought of using accommodations. For example, one No Disclosure student said, “I haven’t yet adapted to the point where I’m like, I have [a disability] or whatever, but and it’s not just an excuse I’m coming up with. So I haven’t adjusted yet at this point.”

Third, No Disclosure students overwhelmingly felt that they either did not need accommodations or that accommodations would not be helpful to them as represented by the large number of Do Not Need Accommodation codes. One No Disclosure student who did not think accommodations would be helpful stated, “I think I would use [extended time] as more of a crutch than, you know, I’d slack off and get behind in my assignments even more than I am now.” Another participant did not feel that she needed accommodations to be successful, saying, “Coursework wise it’s been fairly easy… I haven’t felt like I’ve really needed to [enroll with DS.]” This is in contrast to the Disclosure groups who were able weigh whether they needed to use accommodations in specific classroom settings as represented by their more balanced Need and Do Not Need Accommodation codes.

Last, many No Disclosure students indicated that they choose not to disclose in order to maintain a “typical” identity and avoid negative reactions/comments.
## Table 2

### Qualitative Code Map

<table>
<thead>
<tr>
<th>Theme/Code</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of Accommodations</td>
<td>When a student makes a statement that describes knowledge about or lack of knowledge about available accommodations</td>
<td>&quot;I don’t even know what accommodations I would get if I did talk to them&quot;</td>
</tr>
<tr>
<td><strong>Experience With People</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demeanor of Professor</td>
<td>When a student describes a professor's demeanor as making them more or less likely to disclose</td>
<td>&quot;Some of my professors are just nicer to begin with and I can tell that they’re more open to suggestions&quot;</td>
</tr>
<tr>
<td>Experience with DS</td>
<td>Student describes a positive or negative experience with DS</td>
<td>&quot;[DS has] actually been really supportive and helpful way more than I’ve expected&quot;</td>
</tr>
<tr>
<td>Experience with Professor</td>
<td>Student describes a positive or negative experience with a professor</td>
<td>&quot;But there’s only been one class that I’ve had horrible problems with, uh with using my accommodations, and…it was with my professor&quot;</td>
</tr>
<tr>
<td>Experience with Classmates</td>
<td>Student describes a positive or negative experience with classmates</td>
<td>&quot;but for the most part they’ve [peers] been very accepting of it and don’t see me any differently and just sort of forget about it.&quot;</td>
</tr>
<tr>
<td>Experience with Academics</td>
<td>When the student describes academic performance as influencing their decision to disclose</td>
<td>&quot;I was always just worrying about academics&quot;</td>
</tr>
<tr>
<td><strong>Self-Awareness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need Accommodations/ Don’t Need Accommodations</td>
<td>When a student describes a conscious decision to use or not use (i.e., a need for) accommodations</td>
<td>&quot;I mean you know there’s some things that I’m like I need to use this I have to use this and other things it’s there .. I may need it but most of the time I don’t’&quot;</td>
</tr>
<tr>
<td>View of Disability</td>
<td>Student expresses opinions or views on their disability</td>
<td>“I try to keep [my LD] to myself…I don’t want to feel different”</td>
</tr>
<tr>
<td><strong>Supports</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensating Mechanisms</td>
<td>Student describes having or not having compensating mechanisms</td>
<td>&quot;I’ve sort of learned coping mechanisms to kinda of cope with my disabilities so I could get through college and get good grades&quot;</td>
</tr>
</tbody>
</table>
from peers. Their choice to not disclose exposed them to fewer negative Experiences with Classmates than the Disclosure groups because they were able to more successfully manage their disability disclosure than students who did disclose, who at times must use public accommodations. It is not surprising that students who do not disclose tried to seem typical to their classmates, as these peers sometimes made uneducated and careless comments to SLD when they discovered that they had a learning disability as represented by the negative Experiences with Classmates codes seen in the other two Disclosure groups.

In summary, No Disclosure students were distinguished from the other disclosure groups by having more negative Knowledge of Accommodation, View of Disability, and Do Not Need Accommodation codes than the Letter Only and Letter and Conversation Disclosure groups. In addition, the No Disclosure group also had fewer negative Experience with Classmates codes than either of the other two disclosure groups.

**Disclosure to Professors: Letter and Conversation**

There were also multiple findings that separated the individuals who disclosed with a letter and conversations (i.e., more deeply disclosed; Level Three-B) from the other two disclosure groups. First, students in this group tended to mention the Demeanor of Professor code with a positive connotation more often than the other disclosure groups. Professors whose demeanor tended to elicit disclosure in this group were described as: “willing to be helpful or understanding,” “really sweet and totally accepting,” “very kind,” and “on my side to help me.”

These students also had more positive than negative experiences with professors as noted by their higher positive to negative Experiences with Professor codes. One Level Three-B Disclosure student described a positive experience with her professor, saying:

> I’ll usually say [to the professor], “I see from the syllabus that your class is heavily based on reading and I struggle with that so what do you suggest I do to get around that?” And then they’ll give me some kind of pointer that says, “Oh, just come to class and you’ll be fine” or “Oh man, this class is basically a lot of reading; you’re just going to have to put in the time.” But it just really depends on what they say. So that has helped; it’s helped…to have the professor know me to some certain extent, so he knows that I struggle with reading, so he’s on my side to help me, he knows when I come to office hours, and when I turn in a paper, so that’s good.

Although these students also have negative experiences with professors, their positive interactions seem to outnumber the negative experiences, unlike the other two disclosure groups who have more mixed interactions with faculty.

Last, these students mentioned their disability in a much more positive light than the No Disclosure or Letter Only Disclosure groups. These students tended to use positive View of Disability statements such as, “I’m not any different,” “I’m reaching my full potential,” and “not an issue.” One Level Three-B student simply stated, “[My disability] is just one of those things where I really don’t think anything of it. It just means that I have to work harder, not that I’m any different.”

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**Table 3**

*Means and Standard Deviations of Psychological Factors by Disclosure Level*

<table>
<thead>
<tr>
<th>Disclosure Level</th>
<th>RSDS</th>
<th>SDS</th>
<th>ATRA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level One</td>
<td>120.89</td>
<td>7.84</td>
<td>99.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Mean</td>
<td>16.53</td>
<td>1.48</td>
<td>12.44</td>
</tr>
<tr>
<td>Level Three</td>
<td>135.86</td>
<td>9.65</td>
<td>76.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Mean</td>
<td>15.89</td>
<td>1.99</td>
<td>11.94</td>
</tr>
<tr>
<td>Total</td>
<td>131.52</td>
<td>9.12</td>
<td>82.67</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>31</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>17.24</td>
<td>2.01</td>
<td>15.93</td>
</tr>
</tbody>
</table>
Overall, the codes that differentiate this group from the No Disclosure and Letter Only Disclosure groups are more positive Demeanor of Professor, Experience with Professor, and View of Disability codes than either of the other two groups. These codes are generally skewed more negatively in the No Disclosure group and mixed in the Letter Only Disclosure group.

**Letter Only Disclosure**

The Letter Only Disclosure group (i.e., Level Three-A) had more mixed experiences than either the No Disclosure or Letter and Conversation Disclosure groups. These students tended to have more mixed experiences with their professors as noted by their more evenly distributed positive/negative Experience with Professors codes when compared to the Level Three-B group who had overwhelmingly positive interactions with professors. For example, one Level Three-A Disclosure student described mixed experiences with professors by remarking, “Typically the majority allow me to use the computer, but on occasion I will have to go in and fight with a professor; argue the points.”

These students also had more mixed views of their disability as noted by more evenly distributed positive and negative View of Disability comments than either the No Disclosure group (mostly negative codes) or the Letter and Conversation Disclosure group (mostly positive codes). For example, one Level Three-A student stated, “I didn’t want to admit [I needed accommodations], to take the easy way out; I like working for my grades.” Another student remarked, “[My disability is] not something, really something that I think of as an issue anymore. I think of it as something that I triumphed over and something that made me who I am.”

In general, the Letter Only Disclosure students seemed defined by having more mixed positive and negative Experience with Professor and View of Disability codes than the No Disclosure group (more negative codes than positive) and the Letter and Conversation group (more positive than negative codes).

**General Factors**

Two codes were found to be equally represented amongst the three disclosure groups. First, all groups mentioned the Experience with Academics code much more negatively than positively, indicating academic difficulties. No Disclosure students described their academic struggles with statements such as, “I’ve struggled” and “I didn’t do so well in school.” Letter Only Disclosure students had similar experiences, stating, “I started failing, so I had never come close to failing a class. I had never really failed any exams” and “I remember I studied so hard for my first government exam and got a 70 in it, and I was just, like, completely letdown.” Letter and Conversation Disclosure students also experienced academic difficulty. As one student in this group reported, “I was always just worrying about academics,” “It’s been a struggle,” and “It has been hard.”

Perhaps as a result of academic difficulty, all disclosure groups mentioned the development and utilization of extensive compensating mechanisms though positive Compensating Mechanisms codes. All students in each disclosure group reported utilizing various supports to succeed in college. Common compensating mechanisms described included additional time spent on assignments and studying, study strategies, class selection, pursuing alternate materials (e.g., simplified texts), and time management. This code seems to reflect an aspect of the university experience that is shared by all SLD disclosure levels.

**Discussion, Conclusions, and Recommendations**

**Discussion**

The first research question asked if there are differences in levels of self-disclosure, self-determination, and attitudes towards requesting accommodations between the two disclosure groups (i.e., no disclosure [Level One Disclosure] and disclosure to professors in the classroom setting [Level Three Disclosure])? As hypothesized, the ATRA, SDS, and RSDS differed across the two main disclosure levels. Qualitative results indicate that many of the factors that SLD identify as being important to them when they make disclosure decisions are represented in their attitude toward accommodations and the ATRA scales. Codes that seemed to reflect factors represented in the ATRA were: Need/Do Not Need Accommodations, View of Disability, Experience with Classmates, Experience with Professors (disability disclosure), Knowledge of Accommodations, and Experience with DS.

Similarly, many codes identified as important themes in SLD disclosure decisions were represented by the SDS and linked to students’ self-determination, including View of Disability, Knowledge of Accommodations, Compensating Mechanisms, Need/Do Not Need Accommodations, and Academic Experiences. For example, the View of Disability code seems to reflect the behavior of relatedness, which research (Deci & Ryan, 2002) has indicated is more typically shown in highly self-determined students.

Last, many codes identified as important themes in SLD disclosure decisions were reflected in willingness to self-disclose, represented by the RSDS including Experience with Professors, Demeanor of Professors,
and others do not. First, it seems that students who
themes that help to explain why some students disclose
modifications/Do Not Need Accommodations, Experience
Choice to Disclose
tors that influence their disclosure decisions (see Table 4).
Qualitatively, students indicated that there are many fac-
deciding if they will disclose to university personnel?

to develop compensating mechanisms.
this psychological factor do not significantly add to the

tions, that accommodations would not help them, or
that accommodations would be detrimental to them. It
made sense that students who do not perceive a need
for accommodations for any of these reasons would
choose not to disclose their disability, as they would
have nothing to gain from doing so.

Third, results indicate that Level One students’
choice not to disclose may have been affected by Ex-
periences with Classmates. Previous research suggests
that students who choose not to disclose may do so in
an attempt to maintain a “typical” identity; that is, as a
student who does not have any disability-related needs
(Braithwaite, 1991). Students who do disclose tend to
have more negative experiences with classmates than
do students who do not disclose, as their public utiliza-
tion of accommodations reveals their hidden disability.
Level One students’ efforts to blend in with their peers
may in part have been an attempt to avoid misunder-
standings about disability or generally uncomfortable
situations with peers that can arise when other students
are aware a student is using accommodations.

Last, students who disclosed had considerably
more Experiences with Classmates than students who did not.
This finding is unsurprising, as students who disclose
must interact with DS to obtain and utilize their ac-
accommodations. Students who did not disclose did not
mention experiences with DS, most likely because
they were unaware of the office and/or had no reason
to disclose, as they did not know that
there are relevant services available and/or did not ac-
curately understand what DS could provide.

Second, most students who chose not to disclose
did not feel that they needed to seek accommodations.
Overwhelmingly, students who did not disclose felt
that they did not have a need for specific accommoda-
tions, that accommodations would not help them, or
that accommodations would be detrimental to them. It
made sense that students who do not perceive a need
for accommodations for any of these reasons would
choose not to disclose their disability, as they would
have nothing to gain from doing so.

The second research question asked, what self-identi-
ied factors do SLD think are important to consider when
deciding if they will disclose to university personnel?
Qualitatively, students indicated that there are many fac-
tors that influence their disclosure decisions (see Table 4).

Choice to Disclose
Knowledge of Accommodations, Need Accom-
modations/Do Not Need Accommodations, Experience
with DS, and Experience with Classmates emerged as
themes that help to explain why some students disclose
and others do not. First, it seems that students who
chose not to disclose lacked knowledge about DS and
available accommodations. In light of this information,
it is unsurprising that these students would choose not
to disclose that they have a learning disability. They
had no reason to disclose, as they did not know that
there are relevant services available and/or did not ac-
curately understand what DS could provide.

Second, most students who chose not to disclose
did not feel that they needed to seek accommodations.
Overwhelmingly, students who did not disclose felt
that they did not have a need for specific accommoda-
tions, that accommodations would not help them, or
that accommodations would be detrimental to them. It
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more Experiences with Classmates than students who did not.
This finding is unsurprising, as students who disclose
must interact with DS to obtain and utilize their ac-
accommodations. Students who did not disclose did not
mention experiences with DS, most likely because
they were unaware of the office and/or had no reason
to interact with the office because they were neither
pursuing nor utilizing accommodations.

Depth of Disclosure
The Demeanor of Professors, Experience with
Professors, and the View of Disability themes seemed
to affect students’ depth of disclosure. As mentioned
above, students who had more professors with positive
demeanors tended to disclose more deeply (i.e., have
personal conversations with professors during disclo-
sure) than students with equal numbers of professors
with positive and negative demeanors (i.e., those who
only handed professors their accommodation letter).
This distinction may be because it is easier for students
Table 4

Factors Affecting Disclosure Decisions

<table>
<thead>
<tr>
<th>Disclosure Decisions</th>
<th>Qualitative Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice to Disclose</td>
<td>Knowledge of Accommodations</td>
</tr>
<tr>
<td></td>
<td>Need/Do Not Need Accommodations</td>
</tr>
<tr>
<td></td>
<td>Experience with DS</td>
</tr>
<tr>
<td></td>
<td>Experience with Classmates</td>
</tr>
<tr>
<td>Depth of Disclosure</td>
<td>Experience with Professors</td>
</tr>
<tr>
<td></td>
<td>Demeanor of Professors</td>
</tr>
<tr>
<td></td>
<td>View of Disability</td>
</tr>
<tr>
<td>Global Issues</td>
<td>Compensating Mechanisms</td>
</tr>
<tr>
<td></td>
<td>Academic Experiences</td>
</tr>
</tbody>
</table>

with professors who have positive demeanors to decide that those professors will be persons who will accept deeper disclosures appropriately. Students experiencing mixed professor demeanor may be unsure as to whether a professor will be accepting or dismissive of deep disclosure and therefore feel hesitant to disclose at more than a surface level.

Similarly, students who reported more positive than negative experiences with professors tended to disclose more deeply than students who had more negative experiences. Positive experiences with professors may help students continue to disclose even if they have had a negative experience in the past. In fact, many students indicated that positive experiences often “made up” for poor experiences. Therefore, students who have more positive experiences with professors are more likely to feel comfortable disclosing deeply to faculty.

View of Disability was the last theme that seemed to influence the depth of disclosure. Students who had more positive views of their disability tended to disclose more deeply than those students whose disability views were equivocal. This may be because SLD tend to disclose more deeply if they view the information to be disclosed as fairly innocuous, as the deeper disclosers did. Conversely, individuals who see their disability as more personal and negative, as the No Disclosure and Letter Only Disclosure students did, are less likely to reveal that information.

Issues Affecting Both Disclosure Groups

Finally, the themes of Compensating Mechanisms and Academic Experiences did not seem to contribute to differences between disclosure groups. Students in each disclosure group mentioned having many compensating strategies and felt that academics were difficult at the University. It may be that students in the No Disclosure group used compensating mechanisms to keep their academic achievement at an acceptable level without utilizing formal accommodations, thus avoiding the need to self-disclose. This idea is supported by the fact that 90% of the Level One participants achieved a cumulative GPA of 2.5 or higher while attending the University. The high GPA of the No Disclosure group supports the notion that these students may have been managing their education effectively though the utilization of compensating mechanisms that do not include formal accommodations. These students may be making positive self-determination choices by prioritizing the continuance of successful compensating mechanisms over the consideration of accommodations that may not have been needed. However, students who did disclose overwhelmingly indicated that they felt that they needed both formal accommodations and informal compensating strategies to succeed in school. These two themes seemed to represent shared aspects of being an SLD at the University regardless of disclosure level.
Implications for Interventions

In addition to the contribution of this study to knowledge surrounding factors affecting SLD disclosure, there are practical implications for university faculty, DS staff, and classmates working alongside SLD.

Disability Services. The participants recommended a number of ways that DS could improve to better serve SLD. First, SLD requested that the DS office increase its visibility on campus. Many students reported that DS was neither mentioned during orientation nor pointed out during tours. Many students seemed to hear about the office by word-of-mouth or chance. Students reported that they wished they had been given information about DS as soon as they enrolled at the University. Having DS and accommodation information given to all incoming students as standard practice will be especially important in helping those SLD with lower levels of self-determination obtain accommodations. These students may be less likely than those with higher levels of self-determination to search out such information on their own.

In conjunction with information about services, students asked that SWD testimonials be provided (preferably online). This practice would allow SLD who were thinking about utilizing DS to not only see what accommodations were offered, but also gauge the accommodations process and the helpfulness of the accommodations based on other students’ experiences. Availability of accommodations information and student accommodation “reviews” may specifically impact students with poorer attitudes towards accommodations who are less likely to pursue accommodations.

Second, students asked that DS provide explicit instructions to first-time students reviewing how to utilize and access their accommodations. For example, many SLD reported that they did not know how to go about taking an exam at DS or did not even know they could do so. SLD wished they had some sort of a step-by-step manual or outline that described in detail the actions and timelines required to access certain accommodations. Again, a manual would be especially beneficial to those SLD with lower levels of self-determination who may not be as intrinsically motivated as more self-determined SLD to research this information themselves.

Third, SLD asked DS to provide faculty with more information about available services, disabilities, and professors’ role and responsibilities in the accommodation process. Students reported that they generally had to instruct their professors on DS protocol. As a result, SLD felt that they needed to continuously monitor their professors to ensure that they were fulfilling their part of the accommodations process.

Professors. The first recommendation for faculty by SLD was for instructors to increase their knowledge of disabilities and accommodations and to streamline their accommodation management. SLD reported that, when they approached faculty with their accommodation letters, professors often did not seem to know what to do. SLD often had to take on an expert role and help faculty members navigate through the DS accommodations process. Students expressed that they would prefer to not have to assume this role as it tended to be stressful given the professor-student power dynamic.

Second, students requested that professors work with them to create a standard plan for accommodation utilization during the semester. Students wanted to have their accommodations work the same way consistently throughout a particular class. A standardized accommodation utilization plan may alleviate some of the planning that both professor and student have to complete before each instance of accommodation use. Having an agreed-upon plan may also help students partially relinquish their expert role and reduce stress.

Third, professors should strive to appear open and willing to help students who need accommodations. Many students appreciated the standard disability statement on syllabi and were pleased when professors mentioned this on the first day of class. SLD were thankful for faculty who worked with them without complaint and grateful for those professors who went above and beyond what was required of them. Increased professor openness and flexibility may be particularly important for encouraging accommodation use in those SLD who are less willing to disclose their disability.

Last, SLD asked faculty to be more aware of individual learning differences. Most SLD felt that they were not very different from students without disabilities and that generally minor, informal attempts by faculty to teach to different learning styles would make their experience at the University easier while also benefitting students without disabilities.

At the time of this study the University DS office provided faculty with in-person training regarding SWD in their classes via seminars. The Student Services Building, which houses DS, was reviewed during freshman orientation tours. In addition, the DS office maintained a website that instructed new students how to register for accommodations as well as a general list of accommodations that the University provides; students with further questions were invited to contact the DS office directly. After the completion of this study, results and suggestions were presented to a representative from the University DS office. Since then, the University DS office has added resources to their website, including: a step-by-step explanation of
how to access accommodations; instructional videos about self-disclosure (e.g., how SWD can introduce themselves, disclose their disability, request accommodations, and conclude their conversations with faculty); faculty-directed webpages reviewing disability law, how to create accessible classroom programming, rights and responsibilities for both faculty and students, and how to make referrals to DS; as well as FAQs covering a variety of topics including disability-oriented transitions to college.

Limitations of the Study

This study had four main limitations. The first and most significant limitation was the low number of participants in the quantitative study. The study planned for 46 students in a balanced design that would have yielded a power (1-β) of 0.8. However, despite numerous Researcher efforts over three semesters, only 31 participants could be recruited. This resulted in a post-hoc power (1-β) of 0.57, which is slightly above chance for a medium effect size (Cohen’s d) of 0.4.

The second limitation of the study was that the qualitative participants represented a convenience sample and were not matched between disclosure groups based on any demographic characteristics (e.g., GPA, disability, or gender). This may have skewed the results as participants who completed the online survey first were typically those chosen to participate in the interview portion of the study. These students may have unique characteristic or viewpoints not shared by other study participants.

The third limitation of the study was the use of chosen self-determination and self-disclosure scales. A majority of the self-determination and self-disclosure scales used in research are unpublished and therefore unavailable for use or evaluation of psychometric properties. Of those scales that were available, many had little, no, or poor psychometric data.

The last limitation was the population measured. The population for this study was comprised of high achieving SLD at a large, public, Research One University. As such, the results are not likely to generalize to SLD in a smaller, private, less rigorous, or non-research-oriented educational settings. Furthermore, because there is no standard for determination of eligibility for university accommodations (outside of ADA requirements) it is possible that the specific DS guideline practices at the University may have affected results.

Implications for Future Research

Future research needs to examine the Psychological Factors in a broader population of SLD. It is possible that factors that affect disclosure may differ depending on institutional and student characteristics, such as severity of disability, overall level of academic achievement, academic rigor of institution, and accommodation services available. Of particular importance in this study is the high achieving nature of the participants who participated. It is possible that SLD who are not as high achieving as the University SLD may have different levels of psychological factors than the participants in this study.

Another area for future research would be to confirm the presence and severity of learning disability in the SLD participants. It is possible that the students, especially Level One SLD, may not have had a formal diagnosis of the learning disabilities that they reported. Furthermore, this study did not investigate the severity of their self-reported learning disability. Therefore, it is possible that severity of learning disabilities differed among disclosure groups.

In conclusion, this study found that there are important differences in willingness to disclose, attitudes towards accommodations, and self-determination between students who choose to pursue accommodation and those who do not. Students themselves also identified factors that impact their decisions to apply for accommodations and the manner in which they disclosed their disability once they had been granted institutional accommodations. This information has important implications for postsecondary institutions and illuminates ways that DS and postsecondary faculty may encourage increased accommodation usage within their SLD population.
References


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Speech Recognition, Disability, and College Composition

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Abstract
This study examined the composing processes of five postsecondary students who used or were learning to use speech recognition software (SR) for college-level writing. The study analyzed their composing processes through observation, interviews, and analysis of written products over a series of composing sessions. This investigation was prompted by a perceived lack of published research on SR and the writing processes of college students with learning disabilities (LD) as well as a dearth of research in the area of assistive technology (AT), specifically in college writing courses. While some students dropped out of the study before its completion, results confirmed earlier, limited research that found SR to be an effective writing technology for some college students with chronic spelling difficulties but indicated that college writers with attentional challenges and/or physical difficulties keyboarding may benefit from using SR, too. Findings also suggested that a subset of successful SR users may demonstrate a strong aversion to formal planning but that some planning does occur because SR requires users to formulate sentences silently and then express them clearly and continuously, further indicating that writing processes during dictation may be more internally focused than the general processes of writers while keyboarding. Finally, the study noted that SR is not yet suitable for general use in the college composition classroom; thus, SR will likely remain an AT rather than a new media technology adopted for broader use. Therefore, it is incumbent on disability service providers to identify students who may benefit from SR and offer access and training on their campuses.

Keywords: Speech recognition, assistive technology, learning disability, composition

In public universities in the United States the number of students considered marginalized for any reason continues to grow. The need to increase and maintain enrollment and the democratic value of equal access to education guarantee that the borders of college composition courses will continually expand to include more diverse student populations. Of the students in college writing classes who may be on the boundaries in one way or another, students with disabilities remain among the more marginalized. The Conference on College Composition and Communication’s (CCCC) 2011 position paper, “A Policy on Disability in CCCC,” recognizes the presence of these students and makes clear that “people with disabilities have been oppressed and continue to be relegated to the margins” (para. 3). While definition and measurement issues surrounding the concept of disabilities remain complex, students with reported disabilities make up almost 11% of all postsecondary students in the U.S. (Government Accountability Office [GAO], 2009). It is important to note that disclosure of disability at the postsecondary level is voluntary, so there are likely many more college students who have disabilities than are reported. Current estimates show that just over half of college students who received disability-based services in secondary school no longer considered themselves to have a disability at the postsecondary level and, even among those who did think of themselves as having one or more disabilities, about 10% did not report it (Wagner, Newman, Cametto, Garza, & Levine, 2005). Because of progress in special education, as well as improved access for students with disabilities to higher education effected by federal legislation, composition instructors are
increasingly likely to encounter students who have learning disabilities (LD). This rise in students with LD and other disabilities creates a growing need to embrace a range of approaches to teaching college writing effectively to a diverse student population.

This study examined the composing processes of five postsecondary students who used or were learning to use speech recognition technology (SR) for college writing over a series of composing sessions. The investigation was prompted by a perceived lack of research on the writing processes of college students with LD, as well as a perceived lack of research in the area of assistive technology (AT) in college composition. This study asked if students, particularly those with disabilities, might benefit from the use of SR as a composing tool, how they might benefit from SR, and if college-level writing instructors should add SR to their courses as a new media tool, an AT, or at all. This project explored the commonalities in the composing processes of college students who used SR in one or more composing session through observation, informal interviews, and analysis of written products.

**Literature Review**

**Disability in the College Writing Classroom**

The number of faculty members outraged by the mere presence of those with LD in their composition classes – for an example, see Dunn’s account of “Somnolent Samantha” (Brueggemann, White, Dunn, Heifferon, & Cheu, 2001, p. 375-82) – seems to be declining. Yet in the field continue to question the legitimacy of LD and to believe that people with LD do not belong in college. Despite the intentions of most writing faculty to support the success of an increasingly diverse student population, many educators at the college level do not have the time or expertise to understand and help students who have disabilities. Faculty members’ attitudes about students with disabilities and accommodations can vary significantly even across a single campus, and relatively few institutions offer training for faculty. Because of these reasons, a student with one or more LD entering a composition classroom can expect anything from welcoming support to outright hostility, from ready availability of AT to minimal and obligatory granting of accommodations, from celebration of the diversity of learners to illegal discrimination. Amendments broadening the definition of disability under the 1990 Americans with Disabilities Act (ADA) took effect in 2009, and new federal rules prescribing web accessibility standards in higher education are currently being finalized (Cummings, 2011). Yet despite recent fortifications to legal protections, the relationship between composition studies and LD remains troubled and largely unexplored.

Generally, a disability is “a physical or mental condition that causes functional limitations that substantially limit one or more major life activities, including mobility, communication (seeing, hearing, speaking), and learning” (Raue and Lewis, 2011, p. 1). This broad definition provides a framework for understanding the difference between impairment, something most people will experience at some point in life, and disability, a life-altering condition that seriously restricts vital activities needed to live. The classification is a social construct defined by the intent to protect vulnerable people and strengthen equality. While any number of disabilities can affect the manner in which students learn and communicate, the presence of invisible, language-based specific LD frequently complicates success for college students in composition classes. The range of language-based LD spans labels that include reading disorders and disorders of written expression. The National Joint Committee on Learning Disability defines specific LD, in part, as “a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical skills” (as cited in Cortiella, 2011, p. 3). People with LD are a heterogeneous group with regard to how they learn and process information. Heterogeneity not only reigns within the group but also within a single individual, whose abilities in some areas may be outstanding while very weak in others.

One example of a disorder of written expression is dysgraphia, a processing disorder that causes extreme difficulty with writing and organizing. Unfortunately, few educators at any level recognize this extreme inability to organize thoughts on paper, often chalking it up to laziness or poor handwriting, yet dysgraphia need not automatically prevent students from becoming able writers if they have access to remedial educational interventions and AT. For instance, Barbetta and Spears-Bunton (2007) found that SR could be an effective tool for those with dysgraphia. In addition, about one-third of those who have LD also experience Attention-Deficit/Hyperactivity Disorder (ADHD), a neurobiological difficulty in regulating attention (Cortiella, 2011). The cognitive inability to regulate attention can negatively impact writing in many ways, making organization especially difficult. Learning disabilities are subject to some degree of remediation through education, and AT provide some amelioration in many cases.
AT and SR in College Composition

Assistive technology is “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.” (“What Is Assistive,” 2013, para. 1). Assistive Technology gives people with disabilities a mechanism to do what they need to do to learn, work, and live. For example, text-to-speech reading software that speaks text aloud provides a means for some students with print or visual disabilities to do what they could not otherwise do, functioning in the capacity of a “cognitive prosthesis” (Holmes & Sylvestri, 2012, p. 82-83).

For students who have trouble keyboarding, AT for writing has also become more widely available. An especially effective AT for many students is SR that is often built into operating systems and is available as stand-alone programs. With this technology, the user speaks and the program transcribes. Using SR requires a fairly quiet environment, a stand-alone microphone or headset with a microphone, and individual program training for each user. As with text-to-speech technology, SR can be used both as an AT by those who need it and as an extension of everyday technology by those who do not.

Research on the writing difficulties of college students with one or more LD is rare, as is research on the use of AT by college students. Occasional articles on the intersection of LD and postsecondary composition can be found in major journals in the field that address developmental students (Dunn, 1995, p. 56); however, flagship journals remain almost entirely devoid of similar literature (Barber-Fendley & Hamel, 2004, p. 506). Among the top AT devices used in postsecondary education for language issues in the U.S., SR ranks fifth after audio books, portable word processors, word prediction software, and text-to-speech technology (Sharpe, Johnson, Izzo, & Murray, 2005, p. 9). Although advances in SR are “making a difference in the performance of postsecondary students with writing difficulties” (Martínez-Marrero & Estrada-Hernández, 2008, p. 60), it is still unusual to find references to SR in the literature. The paucity of research on the effectiveness of AT for college writing is remarkable, according to Holmes and Sylvestri (2012): “as far as can be discerned from attempting to find peer-reviewed articles, AT use to circumvent writing deficits has not been studied” (p. 90).

In articles that do address disability in college writing, scholars continue to insist upon increased attention to all disabilities in the composition classroom. Brueggemann et al. (2001) call for increased visibility of disabilities in the college writing classroom. These authors asked writing teachers to “learn to ‘compose’ without words—visually, graphically, orally, using new strategies that perhaps seriously challenge all our traditional pedagogical practices and our strongly held beliefs about literacy and writing as empowerment” (p. 392). The skills needed to produce a text-based essay or research paper differ from those needed to produce a multimedia presentation, yet this call for composing via different modes in order to broaden the definition of literacy intersects decisively with the shifting understanding of literacy brought about by digital technologies. This intersection presents an opportunity for all scholars and instructors of composition to consider students with disabilities as they interrogate their working definitions of literacy. The ongoing explosion of technologies commonly available for reading and writing magnifies this opportunity.

One significant study of SR use by college students from a vocational rehabilitation stance was undertaken by Roberts and Stodden (2005). They trained or offered to train 15 college students with LD in the use of SR. These researchers were specifically interested in the use of SR by college students with LD as a compensatory strategy for writing difficulties and whether this AT use would be continued by students. They found some evidence that writing improved through the use of SR but that the benefits of SR for writing were highly variable and depended on many factors. One meaningful result of the study was the generation of a list of characteristics for the ideal SR user that include the abilities to speak Standard English and tolerate a high degree of frustration (Roberts & Stodden, 2005, p. 61). As a result of the variability of results, those authors strongly cautioned against the notion of SR as a panacea for students with LD, a warning echoed more recently by Holmes and Sylvestri (2012). It was expected that similar characteristics would be important for the participants in this study and that results might vary significantly due to individual difference.

Li and Hamel (2003) reviewed the literature on the writing issues of college students with LD through 2000 and found that the writing difficulties of college students with LD included mechanical aspects such as “spelling, punctuation, and capitalization” and content aspects including “organization and coherence issues” (p. 29). Though SR may not benefit all college students with LD, it may help those who “possess oral communication skills superior to their writing abilities” (Li & Hamel, 2003, p. 34). A major reason for superior oral communication skills relative to writing skills is the neurologically based inability to spell
often seen in students with dyslexia. Higgins and Raskind (1995) described this problem in their report on a quantitative study of college students using SR, which found that writing quality was improved for students with intractable spelling issues when they used SR. In comparing the written products of students using no assistance, a human transcriber, and SR, they found that writing composed with SR received higher holistic scoring because of “big words,” or words with seven letters or more (Higgins & Raskind, 1995, p. 167). The researchers postulated that SR allowed students to use “their more extensively developed oral vocabularies” in writing and “confirmed that a typical writing strategy for them was to substitute a ‘baby’ word for the word they really wanted to use to avoid the embarrassment of spelling it incorrectly” (Higgins & Raskind, 1995, p. 167). Students were freed from the “mental distraction of constantly having to check and recheck spelling” and cited this freedom as “one of the most positive features of the equipment” (Higgins & Raskind, 1995, p. 167). One college student interviewed in another study described the impact of SR on her spelling challenges:

“It’s so cool because of the fact that I can say anything, [even] words that I have a hard time spelling. Words I hadn’t dreamed of writing could be said. The program matched my vocabulary with my writing. Using words like imaginary, legend, big words that can really capture my thoughts and what I want to say. (Roberts & Stodden, 2005, p. 56)

The ubiquitous presence of spell-checkers may appear to obviate the need for AT for poor spellers, but one still has to be able to spell well enough to elicit the correctly-spelled word. SR provides a clear advantage to writers with severe spelling problems if their spoken vocabularies exceed those used in writing, and this advantage was an expected outcome of the current study.

Honeycutt’s (2003) review of SR did not exclude the consideration of SR for use by people with disabilities, but it was concerned primarily with the potential for broader use of SR for composition. He raised interesting questions about how an individual’s writing process may be affected by SR, citing Gardner’s belief that writers may be auditory thinkers who “write from an inner voice” or visual thinkers “seeing whole paragraphs at a time” (Honeycutt, 2003, p. 86). By extension, it might be supposed that SR would be highly beneficial for those with a more auditory approach and less appropriate for visual thinkers. Though this project did not explore cognitive processes or learning styles, its results were expected to implicate the presence of these differences and their interplay with dictation.

Also important to Honeycutt (2003) was the consideration of planning relative to dictation, based on a “plethora of advice” that came from cognitivists during the 1980s recommending formal planning before writing or dictating (p. 90). Many composition instructors continue to maintain that prewriting heuristics and outlines are critical for effective academic writing. Simultaneously, many students resist the use of formal planning and some are able to produce high-quality work without any tangible form of planning. These students may be incurable procrastinators or, as Pollack (2009) observed, some may be “holistic” thinkers and writers “who need to see the big picture” (p. 74), which only arrives after “standing back from the information and letting it reconfigure” in their minds, allowing them to “see it in a new and meaningful way” (p. 83). According to Pollack (2009), dyslexics are often such holistic thinkers (p. 83). Honeycutt (2003) asked the question of planning relative to dictation: Does the speed of SR with its “external representation of evolving text … obviate the need for the elaborate, formal planning” suggested by earlier literature, or “does the need to enunciate clearly and speak in whole, well-formed phrases and sentences” require detailed planning be-
fore beginning to dictate? (p. 92). If Pollack (2009) is correct that many dyslexics think holistically and may resist planning, this could mean that a large subset of SR users may not need or may be strongly averse to using formal planning for dictation. This possibility was a consideration of the current study.

Students who must rely on AT to write often receive no training at all. When such training is provided, it usually begins and ends with a focus on minimal technical proficiency. Sharpe et al. (2005) found that 74% of graduates who used AT in college indicated that “they had taught themselves” to use it (p. 8). Pollack (2009) noted that AT training “is often an entirely technical affair: a crash course in technical ability that takes little account of their course, or learning needs and strengths” (p. 81). The financial cost associated with providing AT tools and training can be prohibitive for many postsecondary institutions. Mull and Sitlington (2003) list lack of funding, abandonment of AT devices by students, and lack of training for university faculty as major impediments to wider availability of AT in postsecondary settings (p. 30). Indeed, as Fichten, Suncion, Nguyen, Budd, and Amsel (2010) note, while students generally report that their information and communication technology needs are met on college campuses, students with disabilities report that their technological needs “were met least well” (p. 150). The current study was unusual, then, in providing free access to SR and including training that specifically proceeded from the learning needs, interests, and strengths of its participants, with individualized training for new users of SR.

Looking for the link between research on SR in college writing and research on college students with disabilities makes sense. If the field of composition and rhetoric seems to have largely neglected the practical realities of disabilities in its scholarship, its scholars and instructors have risen to the occasion regarding the rhetoric of disability. The CCCC (2011) position paper on disability formally recognized the contribution of disability studies to college composition:

Disability studies as it intersects with composition, rhetoric, and literacy studies has enlarged knowledge in our field. The critical lens of disability studies scholarship has produced new knowledge, for example, about variations in composing processes, alternative ways of working with students in the composition classroom or writing center, histories of oppression in education and literacy practices, theoretical explorations of queer and disabled subjectivity, and critiques of the exclusionary power of normate pedagogy. (para. 11)

Expanding inclusivity has become a fundamental principle that defines the work of the field of composition and rhetoric. This statement recognized the value of exploring different technologies for composing and of understanding new ways of teaching, learning, and defining writing in college composition. The current project found its place among research in composition at this precise point of entry. Specifically, this project seeks to answer the following research questions about SR as a composing technology:

- Is SR an effective tool for writers with disabilities to facilitate the production of quality written texts?
- What is the impact of SR on the composing processes used to create traditional, written texts?
- Is SR suitable for general use in the composition classroom or will it remain an AT to accommodate students with disabilities?

Method

Participants

Potential volunteers were selected with the help of the Disabilities Support Office at a community college and all five students who were invited to participate did so. Motivation for participation ranged from wanting to further the research about college students with disabilities to wanting to learn to use SR. Before beginning the study, researchers explained the purpose of the study, the collection and storage of data, and the resulting products of the research, and participants signed informed consent forms to indicate their willingness to participate. No reward beyond training in SR was offered in exchange for participation.

Participants ranged in age from 18 to 30 years and included three men and two women, all American, native speakers of English. Four of the five students attended a public community college and were engaged in composing tasks related to their coursework. The fifth study participant had recently graduated from a private junior college and was in the process of applying for admission to a four-year university. Four of the five participants were curriculum students with experience writing college papers and one was a developmental student who was just beginning a sequence of pre-curriculum classes. Three of the five subjects had completed the required semesters of first-year composition and were engaged in writing papers in other disciplines.
Despite complaints about their writing histories, the participants demonstrated little actual discomfort with writing, ostensibly due to past experience or pleasure through self-expression and hope for their development as writers through continued writing. Each had a distinctive approach to writing, developed through academic and personal practice. Together, these five students showed a range of composing and writing skills, grammar and mechanics skills, and proofreading and editing skills, with a tendency toward the higher end of the grading scale (A’s and B’s) on formal papers. All of the participants also demonstrated linguistic interest and ability. Specifically, each was capable or highly capable of effective oral communication, used a good-to-outstanding spoken vocabulary, and had a desire to improve written self-expression.

The participants varied in their experience with SR. Three had no previous experience, while two had used SR for multiple years. All five students had access to SR as a result of having formally declared disabilities, which ranged from the visible, physical inability to type using a traditional keyboard to invisible differences in brain structure (such as dyslexia, which causes a lifelong inability to decode text and spell adequately) and brain chemistry (such as ADHD, which causes a lifelong inability to regulate attention). The Disabilities Support Office verified these disabilities and recommended students for the study who were interested in SR. The researchers did not access the specific records and medical labels of participants; however, through interviews and observation, some participants disclosed their disabilities and the researchers noted others as they became evident through observation.

Pseudonyms were assigned to each participant. Table 1 provides an overview of the demographic descriptions for the subjects of this study.

**Richard.** Richard was a first-year community college student taking developmental reading and writing courses. His attentional challenges made sustained focus on writing difficult, yet he enjoyed creative writing. Richard’s goal was to become a writer, so he was highly motivated to learn to use SR as an aid to his writing process. He was learning the basics of sentence grammar in his courses and his writing showed self-correction based on these new skills. Richard expressed hope that using SR would help him “become a writer,” a career on which he had his heart set.

**Ariel.** Ariel was a first-year community college student who was taking courses with the hope of transferring to a university. Ariel was a very bright, energetic, and verbal student who could easily generate speech and communicate orally. Her writing was often stymied at the outset because of so many ideas pouring into her mind at once, making it difficult for her to control her thinking well enough to sort thoughts and sequence sentences. Her attentional difficulties increased the cognitive load of writing, stressing working memory enough to make composition a frustrating and often unsuccessful enterprise for Ariel.

**Phoebe.** Phoebe was a second-year community college student. Her educational goal was to complete her community college degree and then transfer to a university. Phoebe was a very fluent reader. Phoebe’s challenges regulating her attention made it difficult for her to compose, yet she had completed her first-year college writing courses with A’s. Her writing process consisted of having lengthy discussions on the topic with her grandmother and then writing out her entire paper by hand. She then typed her paper from the handwritten text. Going directly from silent thinking to typing did not work for Phoebe. She had learned to skip formal planning approaches such as outlining, moving directly from discussion to drafting. She was comfortable talking and could generate speech easily and quickly. She was excited about the possibility of using SR, especially because of spelling difficulties, but she exhibited apprehension because of her tendency to be, as she described it, “a little obsessive” about correctness, needing to have each sentence perfect before moving on to the next. Her need for discussion in order to clarify and develop her ideas prior to writing was not often met in her classes. Phoebe hoped SR would enhance her independence and speed in composing papers.

**Ian.** Ian was a second-year community college student. His goal was to become a rehabilitation counselor and he was moving along successfully in his educational program. Ian had completed the required sequence of first-year writing courses and he was composing a paper for a psychology course at the time of this study. He reported that he typically utilized the support of a learning specialist when writing papers, particularly for proofreading assistance. Ian was an experienced and capable user of SR, having begun using it in middle school due to physical disability and LD. He used SR on his laptop and carried a high-quality headset for dictation. He did all of his academic writing with SR and had learned many shortcuts to speed up his drafting processes. Ian was a student for whom SR was a well-honed AT that enabled writing. His individual writing process had developed around the use of the technology. He
procrastinated more than the other participants, yet his writing process was efficient and effective once he got started. According to Ian, he had learned to “stay six-to-ten sentences ahead” as he dictated. He knew what glitches and inaccuracies to expect from the program and he could deal with them quickly.

Jonathan. Jonathan, the only nontraditional study participant in terms of age, returned to college at 28 after an earlier attempt that had been unsatisfying. Jonathan used alternate format texts (“books on tape”) and had received remedial phonics tutoring in high school. He underwent a psychoeducational evaluation prior to entering a private junior college and learned the details of his dyslexia and his particular learning strengths and needs. By attending to and persisting with effective reading, writing, and learning strategies, Jonathan successfully completed a two-year program in business and was applying to a public university. He had learned to use SR his first semester in college. His experiences helped prepare him for some reading tasks, such as training the SR software, but reading complex college texts remained tiring and difficult. Jonathan explained that when he learned to use SR he “started over” with writing, paying less attention to spelling and mechanical errors in early drafts. By focusing first on composing, aided by SR that reduced spelling errors and effectively increased his written vocabulary to match his spoken vocabulary, Jonathan had learned to design written composition based on rhetorical situation and purpose first and to edit and proofread later as part of a multistep process. Proficient use of SR provided Jonathan the means to revise his initial drafts and to perform global editing, including moving chunks of text around and developing weak areas of his compositions. He had been an exceptional student in his college composition courses.

Materials and Procedures

Conditions and tasks. All of the students used Dragon Naturally Speaking software professional version 11 by Nuance Corporation for the study.

Table 1

Demographic Descriptions

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Richard</th>
<th>Ariel</th>
<th>Phoebe</th>
<th>Ian</th>
<th>Jonathan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
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<td>Female</td>
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</tr>
<tr>
<td>Age</td>
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<td>19</td>
<td>21</td>
<td>20</td>
<td>30</td>
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</tr>
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<td>Upper-Level</td>
<td>Upper-Level</td>
<td>Upper-Level</td>
</tr>
<tr>
<td>Previous experience</td>
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<td>None</td>
<td>None</td>
<td>Extensive</td>
<td>Moderate</td>
</tr>
<tr>
<td>with SR</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Identified disability/ies</td>
<td>Language-based LD</td>
<td>ADHD</td>
<td>ADHD &amp; Psychological Condition</td>
<td>Cerebral Palsy &amp; ADHD</td>
<td>Dyslexia</td>
</tr>
</tbody>
</table>

Note. Writing level in this study referred to the current placement of students in their writing courses. Richard was enrolled in a pre-curriculum, developmental writing course; Ariel was enrolled in a traditional first-year writing course; and, Phoebe, Ian, and Jonathan had completed the first-year writing sequence and were writing in upper-level courses. Identified disability/ies referred to those conditions disclosed voluntarily by participants and/or observed by the researchers during the study. The researchers did not approach this study on the basis of particular disabilities and did not want to make the students feel that they were involved because of disability. Instead, counselors who knew the details of their challenges suggested participants, and the researchers worked on the project with the purpose of understanding them as composers.
Although other SR products are available, including Windows Speech Recognition, TalkingDesktop, Express Dictate from NCH Software, and e-Speaking, Nuance currently dominates the field in speech-to-text technology with its Dragon Naturally Speaking and MacSpeech Dictate programs (Williams, 2010, para. 4). Students used desktop computers with Windows-based operating systems and high-quality headsets with microphones. Composing with SR requires a quiet setting to prevent the microphone from picking up random background noise that the software may attempt to interpret, so the observed SR sessions took place in specially-designed computer labs on two college campuses. All participants worked individually with a composition instructor who had training as a learning specialist.

Because participants were at different levels with their use of SR, their training was individualized to their needs. No generalized training protocol was used. The procedures for this study were constrained by time, lab availability, and differing degrees of proficiency among participants so that one predetermined training protocol was impractical. The tasks and procedures of this study were built upon the learning and writing needs, interests, and strengths of the participants.

New users underwent introductory training with SR that included a demonstration of the dictation process. Although the SR software was advanced enough to use right out of the box without setup, the manufacturers recommended that users complete a training process to create an individual profile. During the introductory sessions, participants trained the SR program to recognize their particular speech patterns to increase the accuracy of transcription. This process consisted of participants reading a selected passage aloud to the program. Students also learned basic commands such as starting and stopping the “listening” function, moving the cursor to new lines or paragraphs, and inserting punctuation. All participants were operating at a basic level and composing within the first session.

In the initial meeting, participants shared their previous experiences with writing, disabilities, and AT, responding to questions from the learning specialist. These questions were meant to be open-ended to elicit a broad range of responses. These are the general questions asked of each student:

1. What do you like/dislike about college writing?
2. What are your strengths and challenges as a writer?
3. How would you describe your writing process, from the time you get an assignment until the time you turn in the paper?
4. What is your experience with disability services, assistive technologies, and speech-recognition software?

Additionally, following each composing session, the participants were asked to share their thoughts on the experience of composing with SR and to reflect on their general feelings about writing in relation to SR.

Students who remained in the study met for additional composing sessions during which additional observation and informal interviews took place. The researchers scheduled five composing sessions for each participant over the course of a five-week summer session during which the students were enrolled in courses and would be on campus. Two participants attended all five sessions, one completed three sessions, and two completed only the introductory session. The writing tasks varied based on student needs and interests in order to enhance and support initial success with SR. Being allowed to experiment with authentic writing tasks while beginning dictation enhanced motivation. Writing tasks for beginners included drafting an email, writing a résumé, and writing a response to a prompt about personal interests. More competent writers composed formal, academic papers. The learning specialist interviewed participants before and after these additional sessions and observed them as they used SR to compose.

**Data analysis.** Through informal interviews, observations of participants while they composed with SR, and examinations of the documents they produced, this project investigated the methods and strategies they employed to create traditional, written texts using SR. The interviews enabled the researchers to gather information about the participants’ past experiences with and evolving attitudes about college-level writing, their own writing processes (planning, drafting, and revising), and composing with SR, as well as their oral communication skills. Observations by the learning specialist during composing sessions allowed researchers to gather data about the speed, ease of use, and actual participant interaction with the technology while composing with SR. These observations also provided additional information about the participants’ composing processes while using SR. Careful examination of the texts produced using SR provided evidence of the quality of the compositions holistically as well as with regard to specific issues of vocabulary, spelling, and errors. Researchers kept notes during all interviews and composing sessions and added a summative statement to those notes fol-
following each session. These notes were kept with copies of the texts composed during the SR sessions and these documents were reviewed for themes connected to previous SR research detailed in the Literature Review, including the following:

- The speed and ease of use of SR (Honeycutt, 2003) and the necessary ability needed to tolerate a high degree of frustration in relation to errors (Honeycutt, 2003; Roberts & Stodden, 2005);
- The importance of the ability to speak Standard English (Roberts & Stodden, 2005) and for strong, clear enunciation (Honeycutt, 2003);
- The benefit of SR for composers whose oral skills are stronger than their writing skills (Li & Hamel, 2003), particularly for spelling (Higgins & Raskind, 1995) and vocabulary (Higgins & Raskind, 1995; Li & Hamel, 2003);
- The impact of SR on composing processes, particularly planning (Honeycutt, 2003) and editing (Higgins & Raskind, 1995; Honeycutt, 2003; Millar, McNaughton, & Light 2005); and
- The results of composing with SR on the products as traditional, written documents and shifting notions of literacy (Brueggemann et al., 2001).

These themes emerged often quite differently for the participants depending on their level of proficiency with SR as a composing technology. Therefore, the users were classified as beginning, intermediate, and competent users of SR. Beginning users were those with no previous experience using SR. Within one session, these users were able to train the program and begin testing it after only a brief demonstration and limited instruction. The literature (Honeycutt, 2003; Roberts & Stodden, 2005) suggested that several technical aspects of SR are crucial to the success or failure of students learning to use dictation. For new SR users, this study found that participants could begin dictation fairly easily, as all three were able to compose documents in their first session. Inserting punctuation into sentences orally also proved to be less difficult than anticipated: participants generally knew where to put periods, question marks, and, to a lesser extent, commas. Two particular issues predicted from the literature (Honeycutt, 2003; Roberts & Stodden, 2005) were confirmed for the new users: the need to speak clearly and forcefully in phrases that flowed and the need to ignore mistakes and keep speaking in order to maintain momentum. New users had various experiences with errors. Errors became an issue right away for two participants. These difficulties were handled in different ways in order to make progress with training. While learning to use the software,
students were persuaded to shift focus from watching text appear and apprehending possible errors to discussing topics of interest during dictation and only checking the screen after composing. In other words, participants used a conversational strategy for initial training. Once these students started talking about something engaging rather than watching for errors to appear, composing became much easier for them.

One new user, Phoebe, expressed specific apprehension regarding the emergence of dictated text and its “correctness.” This was a concern transferred from her linear writing process in which she wrote every word out by hand and then typed the paper using a word processing program, a process requiring rigid and painstaking effort. She had composed that way to try to remember everything she wanted to say, to avoid general mistakes, and to try to avoid spelling errors. Her process was not only time-consuming but, as she lamented, it was also “not too good” at preventing spelling issues. Phoebe dictated the following before she had completed the reading to train the software. It followed from the question, “What are your career goals?” The verbatim text below shows errors typical of the unconscious use of SR, yet it also shows that almost anyone without much effort can use SR to generate text:

Hello my name is Phoebe once some random woman came up to me she heard me talking to some friends and she told me a helical wonderful voice and told me I should go into radio. I’ll know I welcome advice from different people just met to understand things than my own family yeah they want to put me in my different boxes that they see but that’s not really cool so it’s really hard.

Words came easily for Phoebe as long as she did not watch the screen for transcription errors, such as those captured above. With a little coaching and practice during the same session, Phoebe was dictating coherent sentences and enunciating clearly and forcefully enough to reduce transcription errors. Throughout the session, however, she continued to express anxiety over departing from her usual linear process of writing out everything by hand and completely editing one sentence before moving on to the next.

Richard, the other student for whom significant errors emerged, immediately faced the obstacle of clear enunciation. The program did not recognize his pronunciation of some words, and this impeded accurate transcription. During the reading required for training, Richard’s reading dysfluency proved to be an obstacle as well. The sample text is Richard’s first dictation after training the program. He was asked, “Do you have any emails you need to send?” This approach provided a practical use of SR. He opened his email account and dictated the following:

Dear Johnny

How you doing today, and I’m coming to see you this afternoon. Also my mom is going to come to your birthday party, I hope you get this message. Next time you will have a birthday party should invite some family members.

We are going to have a bang up time. Uncle Charlie say he was going to have the apple eating contest and if you want to say anything else give me a call as soon as you get this letter.

Richard learned to add commas and periods during this initial dictation. He used the command “scratch that” a few times during this dictation because the program did not recognize words he was speaking. For Richard, continued use of SR would require practice speaking clearly and pronouncing words correctly. It is possible that dictation could limit his lexicon as much as typing does; in the first case, he might be restricted to only words the program can transcribe correctly and, in the second, only words he can spell. Although pronunciation of some words presented a barrier and limited his writing lexicon, Richard was able to use SR to further his creative self-expression. Dictation has the potential to capture Richard’s ability to quickly generate engaging, wide-ranging narratives but only if he can put in the time needed to train the program effectively and develop the “disposition to tolerate high degrees of ambiguity and frustration” (Roberts & Stodden, 2005, p. 61). It was clear through this study that beginners can start basic dictation and even use SR for more advanced writing very quickly, though observations confirmed the need for strong, clear enunciation and for speaking in continuous phrases.

The third beginner, Ariel, completed the training smoothly and was dictating soon after. Ariel loved using SR right away because it let her speak, an enjoyable activity for her. Prompted to describe her athletic experience, she composed four paragraphs during her first training session. Included here is a sample paragraph of that draft composition:

My day is going pretty well. I’m really sleepy and I can’t wait to go home and take a nap. This
Dragon program is pretty awesome. I don’t want to go to track practice later on today. I have practice at four o’clock. I have a sprinters workout today. I have to run a bunch of 100s and 200s and 400s today which I’m really not looking forward to. After that I have to go to weightlifting. Then after that I have to go on the two mile cool down. Then I go home, eat, take a shower, and go to sleep.

After dictating, Ariel formatted the paragraphs without prompting after learning the command, “New paragraph.” She began adding periods and commas fairly reliably after three reminders. She independently performed minor editing at the end of dictation; for example, she removed several instances of the word “awesome.” Ariel expressed interest in using SR in the future because she said that it helped her “get all the words out.” This example suggested that SR could provide a workable solution to writing a rough draft for an articulate student who enunciates clearly, speaks in phrases, and has many words at the ready. Ariel completed only one SR session for this study, but she expressed motivation to continue working with the technology because it “made writing more fun.” In this way, SR proved to be very advantageous as AT for highly verbal students.

All three new users quickly recognized that physically manipulating the mouse and keyboard was the most practical solution for editing text. This is because moving the cursor around, highlighting text, cutting, and pasting solely by voice command can be tediously intricate. This preference for editing with the mouse affirmed research expectations (Higgins & Raskind, 1995; Honeycutt, 2003) and demonstrated typical SR usage by those physically capable of doing so.

As expected from the literature (Higgins & Raskind, 1995), all beginners cited improvement in spelling as a potential benefit of SR because spelling had remained an intractable problem throughout their writing experiences. They liked the possibility of being able to write with words that they knew and used comfortably while speaking but might avoid while writing because of the impossibility of spelling them correctly. This potential for increasing the working vocabulary of these writers confirms previous research (Higgins & Raskind, 1995; Li & Hamel, 2003). Interestingly, the mechanical concern of punctuation did not appear to be as much of a problem as expected, at least not the simple insertion of periods to finalize sentences. With a few reminders from the trainer, students learned to insert periods quickly. In this case, students seemed able to transfer previous knowledge of mechanics readily to dictation.

Finally, these three new users also expressed interest in the possibility that writing longer papers would become easier for two reasons. First, the speed of dictated transcription compared with typing offered hope that writing would become less exhausting, a problem every student in the study mentioned. For instance, during her composing session, Ariel said it would have taken her a long time to type so much and she would not have wanted to start because of all the spelling errors that would have appeared. Dictating allowed her to get the ideas down quickly enough to keep moving without being overwhelmed. Second, two participants (Richard and Ariel) expressed interest in dictation so that they could orally release from their minds and then capture on screen the mass of swirling thoughts that came and went for them while writing. As Ariel explained, she often got stuck writing first drafts because of “too many words” that “try to come out at the same time.” This cognitive overload could shut down her writing process altogether. Many writing instructors who are unaware of the effects of problems with attention such as those caused by traumatic brain injury (TBI) or ADHD may believe that everyone can learn to organize thoughts before writing, yet the study found this to be untrue. Capturing thoughts quickly on paper before they disappear from their minds had proven difficult in the past for these two students when keyboarding. In previous writing, the interplay of composing internally and composing externally by typing had not proven entirely satisfactory as a means to organize their thoughts, even with the use of an outline.

Intermediate proficiency: Phoebe. Taking the time to become a proficient user may require a pressing need or desire to do so. Unfortunately, the new SR users did not complete the offered training. Phoebe was the only new user who attended enough sessions to begin progressing toward intermediate proficiency, defined as the independent ability to produce documents of different types. For instance, she used a template from Microsoft Word to create a basic résumé. Before using dictation to create a one-page résumé, Phoebe discussed its contents and made notes by hand about what she wanted to include. The primary benefit of using SR for this project according to Phoebe was that spelling impediments were significantly reduced compared with typical word processing. Phoebe reported that spelling had limited her vocabulary and been a significant issue when keyboarding but that SR seemed to “know what [she] wanted to say” so that she was able to use...
vocabulary that she would not have otherwise used. This affirmed earlier research on SR as it affects spelling and vocabulary (Higgins & Raskind, 1995; Li & Hamel, 2003). Some keyboarding was needed for the document, but the majority of the content was dictated. This project provided motivation for Phoebe, both in writing with SR and in furthering her career goals. She saw that her inability to spell need not prevent her from creating important documents.

**Technological competency: Ian and Jonathan.** Becoming comfortable with the technology takes desire and practice. Ian had started using SR in middle school and considered himself an expert at the time of the study. He explained his process of learning to use dictation as a challenge through which his father and teachers in middle school supported him. He was taught a conversational approach to SR, which he explained was to “make believe your paper is a person.” As Ian was first learning to use dictation as a youngster, he claimed it was “hard to look at the computer as a person when you are really talking to an inanimate object.” Over time, Ian became accustomed to this approach, though learning to use third person pronouns in dictation for academic writing posed special difficulties for him. His “conversations” with the computer, as he called them, went better in first and second person. He turned to SR for all his college writing and used the dictation application on his smartphone for “almost everything” else.

For editing, Ian used the mouse and keyboard because he claimed it was “much faster” than voice commands for making changes to the text. Ian’s preference for manual editing reaffirmed earlier findings that SR users would rely on a mix of dictation, mouse, and keyboard for composition. Homophones remained one of Ian’s error-based challenges in writing college papers, and he reported that he read his papers very carefully to find them, as speech recognition cannot distinguish between words that sound the same but are spelled differently. He lamented having problems with common homophones like “to, too, and two” and “there, their, and they’re” among others. To maintain momentum in writing, Ian preferred to locate those errors after a draft was written rather than stopping frequently to make corrections. Ian preferred to avoid prewriting and outlines, reporting that he stayed “six to ten lines ahead in [his] head.” He also shared that he had used thinking maps in high school and “hated” them.

A paper for a survey psychology class illustrated various types of errors, including dictation errors and problems with organization and grammar. Nonetheless, Ian’s writing was good enough to earn a B on this paper. The errors he failed to catch and correct during proofreading did not prevent Ian’s psychology instructor from judging his paper’s form and content as satisfactory. This paragraph from his essay provides examples of a transcription error caused by SR, a typical word-choice mistake that could be made either typing or dictating, and other errors that may or may not have resulted from the use of SR:

> I noticed that the children, especially the younger ones were being constantly supervised by their parent, and there were no further then 3 feet away from their child at all times. Personally, I think that is a little too close. With a parent that is being so close to the child, the child will not have a good sense of adventure and will make it difficult in the social world later on in life. One of the good things about being so close is that when the child crosses a milestone such as climbing up the jungle gym without the aid of the parent. The parent is right there to give them to warn them in a positive manner. This positive feedback ranged from a verbal feedback, such as: “good job”, “way to go”, “You did it all by yourself!”. Of course, this gave the child, the confidence to do the activity that they will be praised for again and again.

For the SR error, Ian dictated “they were,” and the program transcribed “there.” Substituting “then” for “than” in the comparative adverbial phrase “then 3 feet away” represented a mistake that many students make in writing, one that was not caused by using SR. The later error of including two infinitive phrases “to give them to warn them” could be a result of the flow of dictation, but such an error could also occur in texts that are traditionally composed. Worth noting, as well, were the lack of spelling errors and the use of “big” words, affirming earlier studies that found SR beneficial for those with better-spoken vocabularies than written due to spelling issues. If anything, this document demonstrated the need for revision and careful proofreading faced by all writers, suggesting that the range of errors in SR-created documents may not differ substantially from word-processed college writing.

As a masterful user of SR, Ian was eager to offer advice to new users. He called the following his most important message: “Just don’t worry about mistakes!” Regarding the interest instructors have shown in Ian’s use of AT for composition, he reported that none of his instructors had ever asked him about it. This apparent indifference could result from many possible factors, including the similarity between Ian’s papers and those written by students using word processing.
While Ian had years of experience using dictation, Jonathan had been using SR for only about two years. Jonathan reported that he became “comfortable” with dictation quickly and SR had become his choice for composing. He found that he completed his writing assignments faster and with higher quality. Spelling and keyboarding had presented serious obstacles for him, and, according to Jonathan, dictation bypassed the “major portion” of both impediments. Like Ian, Jonathan used the mouse and keyboard for formatting but dictated punctuation. He explained that he had to restrain the perfectionist in himself while creating drafts to avoid interrupting his dictation. While Jonathan described his tendency to “fix, sentence-by-sentence,” he said that he learned to make corrections later in order to “protect his train of thought.” For essay exams, Jonathan had the accommodation of using SR. Because the technology was physically situated in a quiet setting, separate from the classroom, this also provided an aid to his focus. According to Jonathan, this option was “better than sitting in a classroom” because his thoughts were “more congruent” and he felt “more confident.”

Both of the study’s competent SR users also composed papers in their heads, rarely creating any tangible planning documents. In contrast to Ian’s contingent, six-sentence head start, Jonathan’s prewriting stage could last weeks. Jonathan reported that he wrote “the paper in [his] head” before beginning the process of writing. Jonathan frontloaded the paper through what he called his “Zen process” of absorbing information and formulating the paper in his head. The early stages of his process, he explained, consisted of “idea churning” and “inner dialog.” His methods for writing also included as much discussion as possible, for Jonathan viewed discussion as “rehearsal for the paper” and necessary to the “free flow of thoughts.” For the most part, Jonathan used the same grammatical constructions in writing he used in speaking, and, because he was an accomplished speaker, this correlation was effective for him. Thinking about the college writing he had completed, Jonathan asserted, “I never wrote my papers. I spoke them.” Jonathan used the process of composing mentally before physically even when he was keyboarding his writing in high school, but this process had become “more elaborate” with SR. He described this process as “speaking in [his] head,” and reflected that he “could see the paper being written in [his] head.” A short essay written by Jonathan for his first-year composition course demonstrated his ability to create a unified, engaging essay with syntactic and lexical variety. Included here is his introductory paragraph:

It was so hot I could see the heat rising off the asphalt as I sat in traffic on the Beltline on my way home from Louisburg. As I sat in frustration, I began to look at all the vehicles lines up around me. I wondered where they were headed: Home? The shopping mall? The grocery store? They were all headed somewhere. Ever since the first Model T rolled off Henry Ford’s production line, cars have always had the same purpose. No matter how old, how expensive, or how basic they are, cars must get us from point A to point B.

Because of the largely intractable inability to spell that comes with dyslexia, Jonathan’s writing lexicon was greatly enhanced by the use of SR. The range of words he used in this short essay would have been diminished had he composed it using the keyboard. Dictation allowed him to utilize more of his spoken vocabulary for writing and this improved his academic success and confidence.

Jonathan expressed the most compelling description of the change in his writing sensibility once he discovered SR. He described his K-12 writing as suffering from “poor imagination” and as having been under attack from all sides because of spelling and grammar. After learning to use SR, Jonathan found that his “brain was not exhausted from writing the paper, so it was not as tasking to read for proofing right away.” He asserted that learning dictation could “open up good writers” and that many writers like him have “special ability but “we just don’t know it yet.” Jonathan’s ability to write came as a revelation to him only after he became proficient with SR.

Limitations

The present study faced several limitations, including the small number of participants, completers, and written documents. This study was primarily limited by a small sample size. The number of potential participants was greatly reduced by the fact that the research took place during the summer. Over the summer, there were relatively few students on campus and many had limited schedules due to off-campus work. In practical terms, the study was also limited by a lack of resources; simply put, using SR required expensive equipment and an isolated space. Researchers were dependent upon the availability of existing equipment in a shared lab. The low number of completers was a direct result of the low number of participants; beginning with only five participants meant that having two drop out significantly affected the study. Likewise, stronger conclusions would have been possible had more participants produced more
writing over more sessions. Finally, a more structured protocol for interviewing and textual analysis would have likely provided more generalizable data.

**Areas for Future Research**

This project suggested a number of interesting themes that should be confirmed through a larger study. Ideally, such a study would include a range of participants with different disabilities or a relatively large group with one verified diagnosis to determine more precisely how SR might work as AT for users differently depending on the disability with which they live. Having all students work in response to the same writing prompts and questionnaires would also likely provide more useful results.

Such research might specifically address some of the findings of the current study. For instance, a study might compare SR user perceptions of spelling and ease of composing in comparison with textual analysis of previous, traditionally written texts as well as texts composed using SR. Research might also focus on processes to reduce hypercorrection while composing (e.g., composing with the screen turned off) and ways to improve training of the program for students with reading disabilities.

Finally, for the experienced users of SR in this study, planning was a part of the writing process that had nothing to do with writing, outlining, or even drawing diagrams. Planning for these experienced SR users constituted an internal process of formulating sentences and even complete documents. It was also easy to pause the microphone and take short breaks from dictation to mentally prepare as needed. Dictation seemed to require a different kind of thinking in which sentences sprang from the lips of their creators more fully formed. This different process for sentence formation as dictated by the technology is reminiscent of Haas’s (1996) claim that “different writing technologies can support very different mental processes” (p. xiv). These findings regarding planning and composing processes deserve further investigation to identify possible connections with specific technologies, specific disabilities, and/or specific cognitive styles.

**Implications**

Though this study could not precisely tease out the full impact SR has upon composition, the findings do suggest three general conclusions.

First, several of the technical aspects of using SR referenced in the literature were affirmed:

- Composing with SR seems both easier and faster than keyboarding (Honeycutt, 2003);
- Persistence with SR requires the ability to tolerate a high degree of frustration in relation to errors (Honeycutt, 2003; Roberts & Stodden, 2005);
- Success with dictation relies on the ability to speak Standard English (Roberts & Stodden, 2005) and to enunciate clearly (Honeycutt, 2003);
- SR is particularly beneficial for composers whose oral skills are stronger than their writing skills (Li & Hamel, 2003), particularly for spelling (Higgins & Raskind, 1995) and vocabulary (Higgins & Raskind, 1995; Li & Hamel, 2003); and,
- Users prefer to utilize the mouse and keyboard for editing (Higgins & Raskind, 1995; Honeycutt, 2003; Millar, McNaughton, & Light 2005).

Second, planning for dictation represented a critical issue for college writers who used SR. Except for Phoebe, all of the participants expressed very powerful aversions to outlining or even to making informal lists or notes to prepare for writing. Instead, they found discussion to be a highly desirable prewriting activity. All five agreed on the importance of talking out ideas and getting oral feedback from experienced guides, as well as the pleasure of exchanging and nurturing knowledge through conversation. Therefore, planning was a major issue in the use of SR but not necessarily for the reasons Honeycutt (2003) framed. Instead, it is probable that a major subset of successful SR users can and do write without formal planning such as prewriting heuristics and outlining.

Indeed, the two competent users in the study strongly expressed rejection of outlining and other formal planning, suggesting potentially different writing processes due to SR and/or disability.

Third, the final significant implication of this project addresses SR specifically within the context of college composition. For three of the five students in this project, SR was clearly a superior mode for composition. Its speed allowed them to complete writing tasks more quickly and with less cognitive exhaustion. Dictating rather than keyboarding was a physical necessity for Ian, and the others in the group for whom SR was a good choice had an affinity for speaking. Yet this affinity was not necessarily related to an auditory cognitive style, as Jonathan was more of a visual thinker in terms of writing. He explained that he could “see the essay being written in [his] mind,” which was representative of Pollack’s...
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(2009) observation about dyslexics. From this study, it appeared that the interplay of cognitive style and writing method was specific, individual, and largely unpredictable. Both students experienced with SR affirmed that the process of dictation allowed them to produce higher quality academic prose than they would have been able to create by keyboarding. Yet SR clearly does not necessarily offer benefits for all writers. Even in this study that included students who had interest in using the technology, SR may not have been appropriate for two of the five participants, who experienced challenges with speaking/reading fluency and an inability to compose without correcting. SR is no panacea for students with disabilities and, while the field of composition has recognized the work of disability studies scholars, the impact of SR on composition is likely to be limited to discussions of SR as an AT due to practical issues of usability.

Although the functionality of SR may make it more efficient for many users, it requires special conditions that make general use of SR impractical. Dictation cannot be done in the classroom because of background noise and special software, hardware, and training are likely cost-prohibitive for many institutions. With the professional muddle surrounding AT in general, postsecondary writing faculty can be exonerated from a general state of ignorance regarding SR as an important and growing alternative method for composing. Still, writing instructors who want to experiment personally or introduce their classes to SR as a method of generating ideas or drafting will likely find the technology full of potential as a writing tool. Consequently, the option of using readily available technology should be explored. For now, it seems likely that SR will continue to be an AT that will be provided only by the relatively few institutions that can afford it and be made available only to students with certain documented disabilities. Therefore, it is incumbent on disability service providers to identify students who may benefit from SR and offer access and training on their campuses.

These professionals need training and experience in a variety of AT including SR so they can make informed recommendations based on empirical evidence and thorough evaluations of individuals. Indeed, Holmes and Sylvestri (2012) go so far as to chastise psychoeducational professionals who evaluate students for LD of being critically uninformed about AT and making recommendations unsupported by research (p. 92). These trained disability service providers will be better able to match students with AT like SR that will be appropriate and beneficial to the student. In addition, they will be better prepared to provide the necessary training to assist students toward the successful use of such AT. Because service providers may not have much experience with students’ writing, these professionals might do well to share potential AT with writing faculty in brief professional development sessions about disability services in general. Such meetings can facilitate students in finding the support they need through referrals from their writing instructors: those who understand their writing issues the best. Such interdisciplinary work might lead to further discussion and research about the various relationships between college composition, AT, and writers with disabilities.


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Applying Universal Design to Address the Needs of Postsecondary Students on the Autism Spectrum

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Abstract
Legislation and contemporary social policies that favor inclusion and academic accommodations have contributed to a rise in the enrollment of students with disabilities, including students with autism spectrum disorder (ASD), on postsecondary campuses today. However, the literature is scarce about how instructors can routinely address the needs of students with ASD in their classes. There have been reports of how universal design (UD) strategies support the academic success of students who have various disabilities. By comparing instructional strategies that benefit students with ASD to UD strategies reported in the literature, the authors illustrate how a teaching method that benefits a student with a specific disability such as ASD can inspire the development of a UD strategy designed to benefit all students. Potential benefits of the UD approach for students with ASD are revealed and recommendations are made for future research as well as professional development and support for faculty that can be delivered and/or promoted by disability support personnel.

Keywords: Autism spectrum disorder, ASD, universal design

Legal mandates designed to ensure that individuals with disabilities can fully participate in society (ADA National Network, n.d.; Mackelprang & Salsgiver, 2009; U.S. Department of Education, 2011) have played a role in growing numbers of people with disabilities enrolling at institutions of higher education, now estimated to be 11% of all undergraduates (Myers & Laux, 2010). Students with disabilities need to register with the disability services office at the college to request accommodations (Martin, 2012), but often they do not do so due to lack awareness about support services offered, concerns about stigma associated with disclosing a disability, and/or poor self-advocacy skills (Barber, 2012; Getzel & Thoma, 2008; Grasgreen, 2014; Pope, 2013). As a result, many postsecondary students with disabilities may not receive accommodations that they need because institutions do not know about their disabilities (Grasgreen, 2014). Moreover, although there are growing numbers of students with disabilities attending postsecondary institutions, college completion and graduation rates are lower for students with disabilities when compared to students without disabilities (Belch, 2004-2005; Myers & Laux, 2010).

Increased numbers of college students identified as having autism today (Carlotti, 2014; Lorenzetti, 2013; Pope, 2013) may partially be the result of Asperger’s, a high functioning disorder on the autism spectrum, being added to the Diagnostic and Statistical Manual of Mental Disorders (DSM) IV in 1994. Many children who were diagnosed with Asperger’s are now college age (Farrell, 2004; Goehner, 2011; Hare & Hicks, 2007). The Center for Disease Control reports the incidence of autism to be one in 68 children or approximately 1.3 million Americans under age 21, a significant rise from one in 150 children reported in 2002 (Diament, 2014).

Until 2013, the American Psychiatric Association (APA) classified disorders with similar deficits in social interaction, communication, and repetitive behaviors on the autism spectrum as a range of conditions occurring on a continuum from highest to lowest levels of functioning: Asperger’s, pervasive developmental disorder, autism, childhood disintegrative
disorder, and Rett's disorder (APA, 2000; Kantrowitz & Scelfo, 2006). However, in 2013 the APA changed diagnostic criteria in order to improve accuracy of diagnosis and treatment for children with ASD (Diament, 2012a, 2012b; Friedman, 2014; Moran, 2013; Rukovets, 2012). The APA recategorized symptoms into a single diagnosis of ASD (Moran, 2013). Now, criteria used to diagnose ASD consists of three deficits in the area of social communication/social interaction (e.g., social-emotional reciprocity, nonverbal communication, and the ability to develop, maintain, or understand relationships) and at least two restricted/repetitive behaviors (e.g., repetitive movements or speech, insistence on sameness, inflexibility to routines or ritualized patterns of verbal or nonverbal behavior, highly restricted fixated interests of abnormal intensity or focus, and/or above or below typical reactions to sensory aspects of the environment). The APA (2013) also added a new category of Social Communication Disorder for those who have deficits in social communication and interaction without the restricted/repetitive behaviors associated with ASD. There has been public concern that, with the APA's new diagnostic criteria, fewer people might be diagnosed with ASD and thus not be eligible for special education services from schools, health services, and social services (Diament, 2012a, 2012b; Friedman, 2014; Kilgore, 2013; Moran, 2013; Rochman, 2012; Rukovets, 2012), but others report that the prevalence of ASD would only be changed slightly in that some children would receive the new diagnosis of social communication disorder (Autism-Speaks, 2014).

**Challenges for Students with ASD in the College Classroom**

The behaviors of some individuals with ASD can change the dynamics in a college classroom. Students with ASD may ask too many questions, monopolize class conversations, make comments that are not related to the topic of discussion, complain about fluorescent lights, and/or be easily distracted. Some students with ASD may need classroom activities to be predictable/routine; need to avoid crowds in public transportation, hallways, bathrooms, and lunch areas; have difficulty with time management; be unable to socialize; misunderstand particular forms of language (e.g., sarcasm, jokes, irony, metaphors, humor, abstract concepts); have poor concepts of time; have challenges working in groups and difficulty in or aversions to meeting classmates for projects outside of class; have difficulty selecting classmates with whom to work; and experience high levels of frustration during class activities (Barber, 2004; Belch, 2004-2005; Davis, 2011; Farrell, 2004; Gobbo & Shmulsky, 2012; Longtin, 2014; Minnesota State University, n.d.; Monroe Community College, n.d.; Moore; 2006; Organization for Autism Research [OAR], n.d.; Soricelli, 1994; VanBergeijk, Klin, & Volkmar, 2008; Wisconsin Technical College System [WTCS], 2009).

Students with ASD have unique personalities and learning styles and do not all display the same symptoms. Some individuals with ASD are very intelligent overall and/or have exceptional abilities in specific areas such as math, music, sports, singing, art, and memory (Farrell, 2004; Gobbo & Shmulsky, 2012; Van Pelt, 2008). With such variability within the group, one teaching approach is unlikely to be effective for every student with ASD. The Organization for Autism Research ([OAR]; 2006) suggests that professors can support individual students with ASD by helping them choose the best place to sit in the classroom; having clear classroom rules included on the course syllabus; allowing lectures to be tape-recorded and note-takers to attend class; providing access to classroom notes in advance so students can read them before class and thereby better understand the material to be presented; offering extra time on essay tests; and/or facilitating peer study groups.

Some students with ASD benefit from taking online courses because interactions are easier for them online than in person and they benefit from the consistent format typically used in these classes, avoid social stigma, and can control the physical environment to minimize sensory overload (Davis, 2011, Reincke, 2013). Online classes often include a course guide with a detailed week-by-week agenda, readings (e.g., in textbook, articles, websites) and assignments (e.g., discussions, papers, exams) that facilitate effective time management. There are often grading rubrics for homework, discussions, and papers, so students can be fully aware of course expectations and to calculate their grades at any time. While taking these classes, students can listen to soothing music; complete coursework in any room of their home; sit on an exercise ball or sensory swing; be in the company of a favorite pet; take frequent breaks; and dim the lights. They can avoid crowded and noisy lunchrooms, subways, buses, and hallways and restrooms. It has been found that students with disabilities often perform better in online than in on-site courses (Stewart, Mallery, & Choy, 2010).

Students with ASD often need support in two areas typically unaddressed by accommodations on postsecondary campuses: “(1) the executive functions...
of planning, organizing, and time management, and (2) the social-emotional/relationship realm” (Longtin, 2014, p. 88). Some colleges provide academic coaching, workshops for developing self-advocacy skills, and other services tailored to students with ASD (Ashkenazy & Latimer, n.d.; Pope, 2013, Virginia Commonwealth University, n.d.) and other skills that are key to college success (Barber, 2012; OAR, 2006) in addition to beneficial tutoring centers and other services that exist for all students (Longtin, 2014).

The authors use the remainder of this article to discuss how the application of universal design (UD) to instruction leads to inclusive teaching practices that benefit learners with diverse characteristics, include those with ASD, regardless of whether or not they have registered with the disability services office. Comparing UD instructional strategies reported in the literature with those reported as beneficial to students with ASD reveals (1) the potential benefits of UD strategies for students with ASD in the college classroom and (2) that UD strategies used with all students can be inspired by the educational needs of individuals with ASD. This analysis can be useful to instructors selecting teaching practices, trainers offering professional development to faculty, disability service providers engaging with faculty who are interested in proactively addressing the needs of students with disabilities, and to students enrolled in the courses impacted by these efforts.

**Universal Design**

Universal design "is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design" (North Carolina State University, 2011). The Principles of UD, developed by the Center for Universal Design ([CUD], 1997), encourage the development of products and environments that embody (1) equitable use, (2) flexibility in use, (3) simple and intuitive use, (4) perceptible information, (5) tolerance for error, (6) low physical effort, (7) size and space for approach and use. The UD conceptual framework reflects an understanding of disability as one of many forms of diversity, such as those defined by gender, race, age, and ethnicity (Burgstahler, 2012; Harrison, 2006). UD was first applied to the design of buildings and commercial products; later it was applied to the design of information technology; and, more recently, it has been applied to teaching and learning (Bowe, 2000; Burgstahler, 2012; Darby, n.d.). Instructors and support personnel who apply UD within educational settings anticipate the presence of students with diverse abilities and other characteristics and make design decisions that benefit all of these individuals, rather than simply focusing on the average or “typical” student (Bowe, 2000; Burgstahler, 2012). Thus, the application of UD to educational products and environments makes them welcoming and accessible to and usable by students with a broad range of characteristics, including disabilities. The best teachers have long employed flexible teaching strategies that reach a diverse student body (Gurin, Dey, Hurtado, & Gurin, 2002). In a study by Silver, Bourke, and Strehorn (1998), faculty reported that using flexible teaching strategies – including general cooperative and contextual learning, online instruction, provision of organizing tools for students, multimodal instruction, criterion-based learning, extended time for exams and assignments, and testing in the same manner as students were taught – benefit students with diverse characteristics.

Several approaches to applying UD in educational settings have emerged. For example, after a review of the literature on best practices in teaching at the postsecondary level, McGuire, Scott, and Shaw (2003) recommended the addition of two new principles to the original seven proposed by CUD. They concluded that adding principles that relate to a community of learners and instructional climate results in a more complete foundation for applying UD to postsecondary instruction through an approach identified as University Design for Instruction (Center on Postsecondary Education and Disability, n.d.).

The Center for Applied Special Technology ([CAST]; 2011) identified three characteristics of curriculum that reflect Universal Design for Learning (UDL): providing multiple means of representation, action and expression, and engagement. UDL practices are designed to benefit all students, including English language learners, students from different ethnic and cultural backgrounds, students with different levels of preparation for a course, and those with documented or undocumented disabilities. Many authors have shared examples of UDL in K-12 curriculum and instruction; some have articulated the relevance of UDL to the college environment. Examples of "multiple means of representation" include giving directions in multiple ways (e.g., on the whiteboard, on a printed handout, on a website, via oral instructions); providing outlines of class notes to help students understand key ideas (Stein, 2013); and relaying concepts through a mixture of mediums such as lectures, videos, and group discussions (Izzo, Murray, & Novak, 2008). Examples of "multiple means of engagement" include having
students repeat directions following teacher explanations, facilitating class discussions where students can add their thinking to the thinking of others, and providing opportunities for both cooperative learning with peers and working alone (Stein, 2013), as well as making learning motivating and relevant to all students (Izzo, Murray, & Novak, 2008). Examples of "multiple means of action and expression" are using dry erase boards for responses, having students discuss their thinking with peers before responding to the class, and using checklists/organizers to keep track of steps towards task completion (Stein, 2013); as well as using multiple types of assessments such as multimedia projects, written papers, portfolios, oral and group presentations, and multiple quizzes instead of one large exam (Izzo, Murray, & Novak, 2008). CAST’s UDL guidelines promote the development of curriculum that includes options for (1) perception; (2) language, expressions, and symbolism; (3) comprehension; physical action; (5) expressive skills and fluency; (6) executive functions; (7) recruiting interest; (8) sustaining effort and persistence; and (9) self-regulation.

“Universal design of instruction” (UDI) as used by the Center on Universal Design in Education at the University of Washington embraces the established principles of both UD and UDL and applies them to a broad range of on-site and online instructional practices (Burgstahler, 2015). Its foundation is the general definition of UD established by the Center for Universal Design; the addition of “instructional” and replacement of “people” with “students” to the definition highlights its application to education. Thus, UDI “is the design of instructional products and environments to be usable by all students, to the greatest extent possible, without the need for adaptation or specialized design.” Thus, UDI goes beyond an instructor’s application of UDL to the creation and delivery of curriculum, to apply UD to other aspects of an instructional setting—such as the design of a course syllabus, classroom layout, or science lab—to ensure that all educational products and environments are welcoming and accessible to and usable by a great majority of students without the need for accommodations or other additional adaptations (Burgstahler, 2012; Harrison, 2006). Instructors who apply UDI strategies do not ignore the need for accommodations, but rather:

Plan for accommodations for students whose needs are not met by the instructional design. [They] know how to arrange for accommodations. [They] know campus protocols for getting materials in alternate formats, rescheduling class-room locations, and arranging for other accommodations for students with disabilities. [They] make sure that assistive technology can be made available in a computer or science lab in a timely manner. [They] ensure the course experience is equivalent for students with accommodations. (Burgstahler, 2015, p. 5)

Examples of UDI practices were identified and applied by a team of disability professionals and faculty from more than twenty postsecondary institutions as part of a sequence of three projects funded by the U.S. Department of Education and facilitated by the Disabilities, Opportunities, Internetworking, and Technology (DO-IT) Center at the University of Washington in Seattle (Burgstahler, 2015). Project partners identified the process of applying UDI to include broadly defining the “universe” (potential students) for the instruction to include those with a broad range of disclosed and undisclosed disabilities and other characteristics. The leadership team also developed UDI examples that were often inspired by best practices for students with specific disabilities and generalized in such as way to benefit all students in a course.

These examples of UDI practices identified and tested by participants were eventually organized under eight aspects of instruction – class climate, interactions, physical environments, delivery methods, information resources and technology, feedback, assessment, and accommodations (Burgstahler, 2015) – to give faculty, disability service providers, and professional developers ideas for how to begin applying UD strategies for the benefit of all students, including those with disabilities. Suggestions include avoiding unnecessary jargon; identifying and explaining new concepts and vocabulary; placing key terminology on the front board or projected image at the start of the class; providing outlines, class notes, summaries, study guides, and other cognitive supports in both printed and text-based electronic formats; providing instructions both in printed form as well as orally; preparing a syllabus early to allow students the option of beginning to read the course materials before the first class; minimizing time constraints when possible; announcing assignments well in advance of due dates; allowing extended time on tests, unless speed is an essential outcome; providing sample test questions ahead of time to prepare students for your “style” of testing; assigning a class note taker, checking the notes, and sharing them with all students; and giving students a few questions at the beginning of class they should be able to answer by the end of the class.

To demonstrate how UDI examples apply the
principles of UD and UDL, each item on the list of UDI examples is also coded to specific UD principles and UDL guidelines to which the example is considered relevant (Burgstahler, 2015). An instructor needs to decide which UDI strategies will work in his/her class. Such UDI strategies are (1) proactive, (2) offered to all students in a class, and (3) designed to improve the opportunities for learning for all students. The evidence base is strong for some practices; for the others, the evidence base is primarily the previous experiences of a specific instructor.

UDI Strategies Inspired by the Needs of Students with ASD

Potential benefits of UDI strategies for college students who have ASD have been specifically mentioned in the literature (e.g., Gobbo & Shmulsky, 2012; Myers & Laux, 2010). In the following paragraphs, the authors reveal how a suggestion given to faculty for addressing the needs of a student with ASD can benefit other students as well when offered as a UDI strategy for the entire class. Meeting the needs of a student with ASD in this way avoids stigmatizing that student, minimizes the need for accommodations, and creates a more welcoming and inclusive environment for everyone. This is consistent with an approach used by Souma and Casey (2008) to argue that UDI practices can benefit students with psychiatric impairments as well as by DO-IT’s UDI leadership team as they created a list of UDI examples. In the following paragraphs, the authors identify issues reported in the literature regarding students who have ASD and share examples of practices that could be offered as UDI strategies to potentially benefit all students in the class. For each issue presented, at least one UDI example that aligns with the suggestion is reported as well as a reference to literature recommending a similar practice for students with ASD.

Issue: Students experience difficulty in initiating a conversation with an instructor regarding their disabilities and knowing where to turn for help. One UDI strategy to “address individual needs in an inclusive manner” to promote a positive “Class Climate” (Burgstahler, 2015, p. 2) that might help a student initiate a conversation with an instructor regarding his/her disability, disclosed or undisclosed, is to include a statement in the syllabus that invites students to meet with the instructor to discuss disability-related and other learning concerns. For example, such a statement may say, “If you wish to discuss academic accommodations or other learning needs, please contact me after class or via email at [email address] to set up an appointment with me or visit me during office hours [state them], in room [office number].” Many students, including those with ASD, may also benefit when instructors provide contact information for the office that arranges accommodations for students with disabilities, counseling and advising centers, writing centers, tutoring centers, libraries, and other campus support services that may benefit them (Monroe Community College, n.d.; Sorcinelli, 1994).

Issue: The behavior of the students is disruptive in the classroom and/or students are teased by other students. UDI strategies that can proactively address potential behavioral issues include setting clear expectations, encouraging regular and effective communication with students, facilitating engagement in cooperative learning assignments in the category of “Interaction,” and providing regular feedback and corrective opportunities in the category of “Assessment.” Applying the UDI approach, faculty could institute rules and apply in-class strategies that address these issues without drawing undue attention to specific students. The instructor could articulate basic behavioral expectations in the syllabus and reinforce these expectations in interactions with the entire class. A civility statement in the syllabus could share how students must respect diverse perspectives and communications styles and be tolerant of different ways of communicating and learning. An example follows.

The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. Differences of viewpoint or concerns should be expressed in terms that are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop an understanding of the community in which they live. Student conduct that disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from the class.

Gobbo and Shmulsky (2012, p. 42) suggest that faculty relate the message to students that "We're all going through the same course, but we'll all do it differently." Teaching strategies that support the suc-
cess of students with ASD with social relationships (Longtin, 2014) can thus be used as UDI strategies to benefit all students. Such an approach benefits those who need instruction on appropriate behavior and those who are aware of appropriate behaviors themselves and appreciate it when instructors insist that others behave appropriately as well. However, if UDI strategies are employed, but a student’s unacceptable behavior continues, the faculty member should meet with the student to privately reiterate behavioral expectations and give him/her specific opportunities to correct the behavior (Gobbo & Shmulsky, 2012; Sorcinelli, 1994). Clear written and spoken behavioral expectations and timely follow-up with an individual student can minimize the need to engage the campus office charged with addressing the inappropriate behavior of students.

**Issue: Students ask too many questions, monopolize class conversations, and/or ask questions that move away from the topic being discussed.** A UDI approach in the “Interaction” category regarding effective communication is for the instructor to present classroom rules on the syllabus and orally at the first class session that set discussion expectations. Examples include the expectation that all students engage, that individual students ask or answer a total of no more than a specific number of questions per class period, and/or that once a student contributes to a discussion he/she must wait for a specific number of responses from other students before speaking again (WTCS, 2009). A way to reduce monopolization of discussions in a specific class session is for the instructor to announce that questions must be answered by someone who has not yet contributed to the discussion.

If a student asks questions or makes comments that move away from the topic being discussed, an instructor can re-direct him/her to bring the conversation closer to the topic by politely saying something like, “You make a good point, but it is beyond the scope of today’s topic, [name the topic]. To discuss your question further, please send me an email message or make an appointment to meet with me in my office” (Monroe Community College, n.d.; Moore, 2006). All of these suggestions benefit the class as a whole by increasing the participation of all students in discussions and minimizing dominance from a few while supporting students with ASD and helping them develop skills in the area of social relationships (Longtin, 2014).

**Issue: Students do not engage in class discussions and other activities.** UDI strategies in the category of “Interaction” include giving all students specific instructions, verbally and in print, regarding expectations for participation in discussions, presentations, and small groups and to offer a variety of ways to communicate. They should offer multiple options such as online discussion boards, in-class discussions, small groups engagement, since individuals may be more comfortable participating in some formats more than others (Gobbo & Shmulsky, 2012). Such alternatives are an application of the UDL principle of providing multiple ways for students to engage. As an example of how an instructor can ensure that all students contribute to a full-class discussion in some way, students could be told to pick up at the beginning of class a 3-by-5 inch notecard. On one side of the card they could be asked to write their names and at least one question, then write one remaining question they have on the other side of the card, and turn them in at the end of the class session. Besides promoting engagement of students with ASD (Longtin, 2014), English-language learners, and students who are shy, this approach can help guide the instructor in future classes and be used as a record of attendance and engagement.

To encourage the engagement of students with ASD in small group activities, it has been suggested that an instructor require small groups to work together during class (Gobbo & Shmulsky, 2012; WTCS, 2009); assign, or ask the students to assign, very specific roles for each student, such as recorder and speaker (Gobbo & Shmulsky, 2012); and otherwise facilitate group interactions (OAR, 2006). It is also recommended that for some assignments instructors allow students to work independently (WTCS, 2009). For student presentations, the instructor could allow students to choose to make their presentations to the entire class, to a small group, to the professor during office hours, or in a video (Gobbo & Shmulsky, 2012). Offering multiple means for engagement, a key principle of UDL, benefits the individual who is reluctant to participate as well as others who benefit from his/her perspectives and expertise. Related UDI examples include encouraging different ways for students to interact, facilitating participation in cooperative learning activities in the category of “Interaction,” and providing multiple ways to gain knowledge and providing cognitive supports in the category of “Delivery Methods.”
Issue: Students are sensitive to fluorescent lights, are easily distracted, or are negatively impacted by other environmental issues. The instructor is encouraged to pay particular attention to the physical space in examples under the UDI category of “Physical Environments and Products.” All students benefit when the room is arranged so that everyone has a clear view of activities in the class. He/she could make written and verbal suggestions to all students regarding issues that may be particularly helpful to students with ASD. Examples include encouraging students who consider themselves to be easily distracted to sit in the front of the room and away from windows or doors (Gobbo & Shmulsky, 2012); who need frequent breaks to sit near an aisle and a door (Gobbo & Shmulsky, 2012); who are negatively affected by fluorescent lights or other environmental issues to choose a best place that minimizes their impact or wear sunglasses (WTCS, 2009). Instructors could also film and make available online or allow students to tape record their lectures for reference at a later time (OAR, 2006). For factors to consider in requesting the assignment of future classrooms, faculty could ask the classroom coordinator to locate available classrooms with a minimum of distractions as well as fluorescent-free lighting. More long-term, they could encourage administrators to apply UDI strategies as they design and renovate instructional facilities.

Recognizing that some students, with or without disabilities, have difficulty sitting for long periods of time, a faculty member could take a UDI approach by providing students with regular breaks during class (Moore, 2006), encouraging students who need additional breaks to sit in the aisle and near a door to avoid disruption of the class or stand unobtrusively in the back of the classroom. Students with and without ASD who have difficulty sitting for long periods of time should be encouraged to consider taking some classes online.

Issue: Students need predictability and routine. An example for addressing this issue, in the “Delivery Methods” category of UDI, is to provide consistent practices and cognitive supports. The instructor could allow students to sit in the same place each class (Monroe Community College, n.d.; WTCS, 2009) and share a class routine in spoken and written form (Gobbo & Shmulsky, 2012; Monroe Community College, n.d.). For example, an instructor could review prior class topics and provide time for questions and answers at the beginning of each class and then summarize content and give assignment reminders at the end of the class session. An instructor should clearly point out changes in dates of exams or assignments as early as possible (Gobbo & Shmulsky, 2012; Minnesota State University, n.d.; Monroe Community College, n.d.).

Issue: Students are easily confused about assignments and timelines. The UDI category of “Information Resources and Technology” encourages an instructor to be detailed and clear about assignments and timelines in the syllabus. Following is an example, adapted from Lerner (2012), that illustrates what can happen when faculty are vague about expectations.

A professor told the class to "submit an assignment before 4:30 p.m. on Tuesday." However, a student with ASD stood outside the professor's door, waiting for the professor to arrive at 4:30 p.m. to give the instructor the assignment. When the professor did not arrive by 5:00 p.m., the student went home, with the paper. The student did not understand the professor's instructions and did not ask for clearer instructions. In addition, the student was not a good self-advocate, or he/she could have reached out and asked the department secretary for clarification before leaving the college. The professor wanted to have students put the assignment in his/her mailbox before 4:30 p.m., but the student did not figure that out. The professor received the paper the following week during class time and marked it late. However, the student finally told the disability coordinator at the school about what happened. Ultimately the situation was resolved by the disability coordinator at the college after talking to the professor, and the paper was not marked late.

The question is, how can we better explain what we want to all students, including those with ASD, to understand and do? The answer to this question is to be clear and specific when giving instructions, deadlines, and procedures because it benefits everyone. In the situation described above, the professor should have been specific about the place to submit the paper, such as to put it inside the professor’s department mailbox, email it, put it under the professor’s office door, and/or give it to the department secretary. For example, “We will have a test on Friday, April 5th” is a better instruction than, “We will have a test after Spring break.” Similarly, “Bring a copy of your midterm paper to class on Monday, March 18” is clearer than saying, “Be sure to give me enough time to read a draft of your midterm essay before it is due.” As with other UDI strategies, making expectations clear and specific is a best practice for all students, not only those with ASD.
Issue: Students have difficulty managing their work, especially organizing the completion of parts of large assignments and completing essay exams. Examples for addressing this issue can be found under the UDI “Delivery Methods” and “Assessment” categories. To benefit students with and without ASD, an instructor can include in a detailed course syllabus clear expectations and deadlines, assessment methods, and a course calendar. The instructor should remind the class of upcoming deadlines, exams, and readings. All students can also be encouraged to consider using personal digital assistants, calendars, and/or alarms to remind them when to study for a test, when to complete readings and assignments, and when to conduct research for a paper (VanBergeijk et al., 2008).

Many students, including those with ASD, can benefit from a UDI strategy of breaking large assignments down into smaller, more manageable parts with multiple due dates (Monroe Community College, n.d.; VanBergeijk et al., 2008). Table 1 presents an example of how the assignment, "By May 20 submit a ten-page research paper on a topic related to this course (30 points)," could be re-designed by asking students to submit specific products.

Supporting students’ ability to plan, organize, and manage time benefits students with ASD (Longtin, 2006) but likely others in class as well. For an essay exam, giving students guidance on organizing essays, examples for practice, and extra time to complete the exam (OAR, 2006) may benefit many students.

Issue: Students do not understand some forms of language, such as sarcasm, jokes, irony, metaphors, humor, and abstract concepts. Examples to address this issue are included in the UDI categories of “Delivery Methods” and “Information Resources and Technology.” The instructor should deliver content in multiple ways, orally and in writing, accommodating a variety of reading levels and language skills. He/she should present content in a logical, straightforward manner and avoid unnecessary jargon and complexity; define new terms when presented; and restate a point in multiple ways, including in concrete, straightforward terms. Instructing in this manner benefits students with ASD but also English language learners, very old or very young students, and students with a variety of cultural backgrounds.

Issue: Students experience high levels of overall anxiety and frustration. Taking actions to create a comfortable course climate for everyone is an important proactive step for reducing the anxiety of many students. For example, UDI strategies under “Class Climate” included being approachable and available, welcoming questions and alternative points of view, and responding patiently. An “Interaction” UDI approach that may reduce anxiety is to use online, asynchronous communication because it allows for each student to take as much time as they need to type a comment. As a “Delivery Method” providing a videotape of lectures online or letting students video- or audio-record the class (VanBergeijk et al., 2008) and providing lecture notes in advance to minimize the need to take notes (Texas A & M University, n.d.; VanBergeijk et al., 2008) may reduce stress and increase access. Allowing students to demonstrate learning through multiple assessments (e.g., using multimedia, delivering presentations), instead of in one way, is a UDI “Assessment” strategy that may reduce the anxiety of students (Izzo, Murray, & Novak, 2008). A “Class Climate” UDI approach is for faculty to invite all students who are frustrated or anxious to meet with him/her to discuss how they can reduce these negative emotions (Gobbo & Shmulsky, 2012; Monroe Community College, n.d.). Providing course materials well in advance so that students can prepare ahead of time may also reduce anxiety (OAR, 2006). Students who experience high levels of anxiety should be encouraged to consider taking some courses that are offered in a self-paced online format (Gobbo & Shmulsky, 2012; Stewart et al., 2010).

Recommendations

The authors recommend that college faculty employ UDI strategies in their courses to address the learning needs of a diverse student population that includes students with ASD (both those who do and do not self-identify). Considering issues for students with ASD as instructors carefully select textbooks and other curriculum; design their course policies, presentation, and interaction methods; course assignments; and the organization of content, support materials, and assessment methods can support learning for all students. Promoting an inclusive physical environment and course climate will also make a more pleasant learning environment for everyone.

When an instructor identifies learning strategies or specific accommodations beneficial to students with various types of disabilities, he/she should consider if such strategies may benefit other students and, if so, consider implementing these practices for all students. An example of this UDI approach is inspired by the need for captioning on videos as an accommodation for students who are deaf. However, if an instructor uses videos with closed captions, other students will benefit as well. English-language
learners and students with some types of learning disabilities benefit from seeing the written word as well as hearing it aurally. Students who want to review a specific section of a video can use online tools to search the captions to locate the specific content. Individuals watching a video in a noisy (e.g., in an airport) or noiseless (e.g., while children/spouses are sleeping) environment can benefit from captions as well. All students can benefit from seeing the spelling of technical terms and other words they are unfamiliar with as they watch a video.

Clearly, more research needs to be done to further identify the obstacles and solutions to successful college course completion for students with disabilities and how UD (including specific UDI and UDL strategies) principles can play a role in their success. Moreover, offering professional development to faculty who are experts in their professional disciplines but not necessarily knowledgeable about how to effectively use a broad range of teaching strategies may be beneficial to instructors and, ultimately, to their students. This recommendation is consistent with Myers and Laux (2010), who expressed the need for continued professional development to promote awareness and practice of UD and encourage faculty to go beyond legal compliance with the Americans with Disabilities Act. Personnel in disability support services and in teaching and learning centers can play important roles in developing and delivering such professional development. They can emphasize the differences between and importance of two distinct practices: being proactive (e.g., applying UDI) in addressing the needs of students with a broad range of characteristics and being reactive in addressing the additional needs of students who require disability-related accommodations. Faculty members should also learn how UDI practices can reduce the need for accommodations for some students because access supports are built into the course in a manner that benefits a wide range of learners.

### Conclusion

The authors share statistics regarding the growing numbers of students with ASD attending postsecondary institutions and the characteristics and academic needs of this population. They make a case for applying the UDI approach to address the needs of college students with ASD while also benefiting other students. The authors note how academic strategies particularly beneficial to students with ASD can inspire instructors to consider implementing teaching techniques that benefit all students. Such practices have the potential to increase the overall success of college and university students and ultimately benefit academic and career fields with the talents and perspectives of individuals with a diverse set of characteristics and backgrounds. It is expected that this analysis can be beneficial to instructors selecting teaching practices, trainers offering professional development to faculty, and disability service providers engaging with faculty who are interested in addressing the needs of students with diagnosed or undiagnosed ASD and, ultimately, to students enrolled in the courses impacted by these efforts.

### Table 1

<table>
<thead>
<tr>
<th>Due Date</th>
<th>Assignment (point value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, February 4</td>
<td>A description of your topic in 3–5 sentences (2 points)</td>
</tr>
<tr>
<td>Monday, February 25</td>
<td>A list of three sources that you have located (2 points)</td>
</tr>
<tr>
<td>Monday, March 11</td>
<td>A summary of the main points of the paper (2 points)</td>
</tr>
<tr>
<td>Monday, March 18</td>
<td>A list of another three sources (2 points)</td>
</tr>
<tr>
<td>Monday, April 8</td>
<td>A summary of the main points of these articles (2 points)</td>
</tr>
<tr>
<td>Monday, April 22</td>
<td>An outline of your paper (2 points)</td>
</tr>
<tr>
<td>Monday, May 6</td>
<td>A draft of your paper (3 points)</td>
</tr>
<tr>
<td>Monday, May 20</td>
<td>Your final paper (15 points)</td>
</tr>
</tbody>
</table>
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Resources

Organizations that provide support and/or resources that can benefit people with ASD in college and advocates include those listed in Table 2.

Organizations that provide support and/or resources for faculty regarding UD applications in educational settings include those listed in Table 3.

Table 2

Organizations that Provide ASD Information for College Students

<table>
<thead>
<tr>
<th>Organization/Resource Name</th>
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</tr>
<tr>
<td>Asperger's Association of New England</td>
<td><a href="http://www.aane.org/">www.aane.org/</a></td>
</tr>
<tr>
<td>Autism Higher Education Foundation</td>
<td><a href="http://www.autismhighereducationfoundation.org/">http://www.autismhighereducationfoundation.org/</a></td>
</tr>
<tr>
<td>Autism Society</td>
<td><a href="http://www.autism-society.org/">www.autism-society.org/</a></td>
</tr>
<tr>
<td>Autistic Self-Advocacy Network (ASAN)</td>
<td>autisticadvocacy.org/</td>
</tr>
<tr>
<td>College Autism Spectrum</td>
<td><a href="http://www.collegeautismspectrum.com">www.collegeautismspectrum.com</a></td>
</tr>
<tr>
<td>College Internship Program</td>
<td><a href="http://www.cipworldwide.org/">www.cipworldwide.org/</a></td>
</tr>
<tr>
<td>College Living Experience</td>
<td>experiencecle.com/</td>
</tr>
<tr>
<td>Community College Consortium</td>
<td><a href="http://www.cccaid.org/">www.cccaid.org/</a></td>
</tr>
<tr>
<td>Daniel Jordan Fiddle Foundation</td>
<td><a href="http://www.djfiddlefoundation.org/">www.djfiddlefoundation.org/</a></td>
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<tr>
<td>DO-IT Center</td>
<td><a href="http://www.washington.edu/doit/">www.washington.edu/doit/</a></td>
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<tr>
<td>Global and Regional Asperger Syndrome Project (GRASP)</td>
<td>grasp.org/</td>
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<tr>
<td>Organization for Autism Research (OAR)</td>
<td><a href="http://www.researchautism.org/">www.researchautism.org/</a></td>
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<tr>
<td>US College Autism Project (USCAP)</td>
<td><a href="http://www.usautism.org/uscap/index.htm">www.usautism.org/uscap/index.htm</a></td>
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Table 3

Organizations that Provide Information on UD Applications in Education

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<th>Organization/Resource Name</th>
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<tbody>
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<td>cast.org/</td>
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<tr>
<td>The Center for Universal Design (CUD)</td>
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<tr>
<td>Universal Course Design Website</td>
<td><a href="http://www.eonline.org/">www.eonline.org/</a></td>
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College Student Narratives About Learning and Using Self-advocacy Skills

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Abstract
Self-advocacy is the ability to communicate one’s needs and wants and to make decisions about the supports needed to achieve them (Stodden, Conway, & Chang, 2003). Research shows self-advocacy skills are related to academic performance and successful adaptation to college (Adams & Proctor, 2010; Getzel & Thoma, 2008; Hadley, 2006; Murray, Lombardi, & Kosty, 2014; Thoma & Wehmeyer, 2005). Yet, few studies have documented how youth learn to self-advocate and even fewer have delved deeply into how or when students use self-advocacy skills in college. Narratives gleaned from eight students with disabilities in a qualitative grounded theory study begin to fill this gap. Participants reported learning self-advocacy skills from family members and educators early in life. Findings from this study also demonstrate that college students utilized self-advocacy skills in three different ways: proactively, reactively, and retrospectively. Recommendations to enhance the self-advocacy skills of students with disabilities are provided for family members, K-12 personnel, and postsecondary educators.

Keywords: Self-advocacy, grounded theory, transition to college, self-determination

Students with disabilities are a growing population in postsecondary settings. Tracking a national sample of students who were identified as having a disability in high school, Newman et al. (2011) found that eight years after high school graduation, 60% of the students enrolled in some type of postsecondary institution. However, students with disabilities were substantially less likely to attend 4-year colleges and universities than youth from the general population (18.8% of students with disabilities compared to 40.2% for the general population). This number is even lower for particular sub-populations of students with disabilities, including students with intellectual disabilities, emotional disturbances, and those with multiple disabilities. According to the National Longitudinal Transition Study 2 (NLTS2) survey, students with visual impairments, those with hearing impairments, and those with speech/language impairments were among the most likely to enroll in 4-year colleges and universities. Mirroring trends for the general population, students with disabilities from families with incomes under $25,000 were less likely to enroll in a postsecondary institution than were students from families with incomes over $50,000. However, unlike trends in the general population, there were no differences by gender or race in the likelihood of enrolling in a postsecondary institution among students with disabilities (Newman et al., 2011).

Studies indicate adjustment to college for students with disabilities can be difficult, leading to higher rates of dropping out (Dowrick, Anderson, Heyer, & Acosta, 2005; Murray, Lombardi, & Kosty, 2014; Murray, Goldstein, Nourse, & Edgar, 2000). Many students who begin college do not graduate. The 2011 report from the NTLS2 study found that eight years after high school, fewer students with disabilities who began college graduated within this time frame (41%) in comparison to the general population (52%). For students attending 4-year colleges and universities, the rate of completion for students with disabilities was even lower, with 34% graduating within the eight year time frame (Newman et al., 2011).

Research with postsecondary students suggests that self-advocacy skills are related to adaptation to college, persistence, and academic performance (Ad-
Self-advocacy is the ability to communicate one’s needs and wants and to make decisions about the supports needed to achieve them (Stodden, Conway, & Chang, 2003). Yet, we know little about how students with disabilities learn self-advocacy skills. Moreover, we have no data about if, when, and how students utilize those skills during their first year of college. This paper begins to fill that gap by providing qualitative evidence regarding the development of self-advocacy skills from the perspective of eight first-year students with non-visible disabilities at a mid-sized public university in the Northeast. It should be noted that the nature of self-advocacy might be different for students with non-visible disabilities than for those with visible disabilities. First, the students have to make a conscious choice to self-advocate. Second, they have to disclose their disability and accommodation needs because their disability is not apparent to the receiver.

Analysis of student narratives from a grounded theory study yielded rich descriptions about self-advocacy from college students with disabilities. In this paper we explicite how self-advocacy was an on-going and adaptive process for young people with disabilities. Students in our study learned self-advocacy skills early in life from parents and educators and honed their skills as they engaged in proactive, reactive, and retrospective self-advocacy in college. In accordance with qualitative tenets requiiring thick, rich description of a particular phenomenon, this paper offers details about the under-studied phenomenon of self-advocacy by college students.

**Disclosure and Accommodations**

As students make the transition from the structured and guided educational process of high school to a self-directed path after graduation, the importance of self-advocacy increases. According to the stipulations of the Individuals with Disabilities Education Act (IDEA [§300.43[a] [1-2]]. It is considered a violation of IDEA/IDEIA if students have not been provided with supports; to identify their strengths and areas of need; to set goals and make plans to achieve them; and to know their rights, if any, under Part B as they move out of secondary education. It is unclear from the dated literature if this is happening for contemporary college students with disabilities (Janiga & Costenbader, 2002; Trainor, 2005).

In the IDEIA 2004 amendment, specific revisions were made to address the transition from secondary to postsecondary life for youth with disabilities. It states that beginning in the sixteenth year, transition should be “a coordinated set of activities based on students’ strengths, preferences, and interests,” and requires students be included in transition planning activities (§300.43[a] [1-2]). It is considered a violation of IDEA/IDEIA if students have not been provided with supports; to identify their strengths and areas of need; to set goals and make plans to achieve them; and to know their rights, if any, under Part B as they move out of secondary education. It is unclear from the dated literature if this is happening for contemporary college students with disabilities (Janiga & Costenbader, 2002; Trainor, 2005).

Research shows that many young people choose not to disclose their disability or request accommodations through the office of disabilities upon entering college (Belch, 2011; Hadley, 2006; Megivern, Pellerito, & Mowbray, 2003; Vickerman & Blundell, 2010; Wagner, Newman, Cameto, Garza, & Levine, 2005). Yet, disclosing one’s disability to university personnel is a key step in requesting accommodations (Olkin, 1999; Salzer, Wick, & Rogers, 2008). Studies suggest that students have a variety of reasons for not disclosing their disability and requesting accommodations including embarrassment about disclosing one’s...
disability to faculty and fear of stigmatization from peers or faculty. However, the most common reason given by students who did not ask for accommodations was that they did not need them (Newman et al., 2011; Olkin, 1999; Salzer et al., 2008).

Self-Advocacy

In some literature, self-advocacy is incorporated as a component of the larger construct of self-determination, which is a combination of skills, knowledge, and beliefs that enable a person to engage in goal directed self-regulated behavior (Abery & Stancliffee, 2003; Anctil, Ishikawa, & Scott, 2008; Test, Fowler, Wood, Brewer, & Eddy, 2005; Thoma & Wehmeyer, 2005). Self-determination is associated with important educational processes and outcomes such as academic success, and persistence (Getzel, & Thoma, 2008). Research has described the developmental process and predictors of self-determination from early childhood to early adulthood, but little emphasis has been placed on the adaptive process of self-advocacy and what happens when students enroll in college (Heller et al., 2011; Shogren et al., 2007).

In this literature review, we focus on self-advocacy independently of self-determination. Our rationale for this emphasis is rooted in our qualitative methodological perspective. Since a hallmark of qualitative research is honoring an emic (i.e., participant) perspective (Jones, Torres, & Arminio, 2013), we have used the term “self-advocacy” to reflect student perspectives. Moreover, our participants consistently utilized this term in a way that aligned with the narrow concept of self-advocacy versus the larger construct of self-determination.

While educators might use slightly different definitions of self-advocacy in practice, we have selected a definition cited frequently in the scholarly literature. Stodden et al. (2003) described self-advocacy as the ability to communicate one’s needs and wants and to make decisions about the supports needed to achieve them. Key components of self-advocacy are knowledge of self, knowledge of rights, ability to communicate, and ability to be a leader. Knowledge of self refers to understanding one’s preferences, goals, learning style, strengths, weaknesses, accommodation needs and the characteristics of one’s disability. Knowledge of rights refers to understanding personal rights, community rights, educational rights, steps to correct violations, and steps to advocate for change (Test et al., 2005). Self-advocacy skills draw heavily on the cognitive processes called executive functions. The executive function skills are planning and organizing actions. They include working memory, verbal self-regulation, inhibition of behavior, and motor control (Wicks-Nelson & Israel, 2013). Deficits in executive functioning may interfere with the effective use of available resources in the college setting (Wolf, 2001).

Self-advocacy skills are related to adaptation to, and persistence in college, as well as academic performance (Adams & Proctor, 2010; Getzel & Thoma, 2008; Hadley, 2006; Murray, et al. 2014; Thoma & Wehmeyer, 2005). Results from two recent studies show that students with higher levels of self-reported self-advocacy skills also reported higher levels of adaptation to college (Adams & Proctor, 2010; Murray et al., 2014). Specific self-advocacy skills shown to promote students’ success in higher education include: utilizing tutoring labs and disability services, forming relationships with instructors, and having a support system on campus (Adams & Proctor, 2010; Getzel & Thoma, 2008).

Influences on Self-Advocacy

Although the evidence suggests that self-advocacy is related to important educational success measures such as adaptation, persistence, and academic performance (Adams & Proctor, 2010; Getzel & Thoma, 2008; Hadley, 2006; Murray et al., 2014; Thoma & Wehmeyer, 2005), we know little about how self-advocacy skills are developed. In the period of late adolescence, young people can be expected to contribute more actively to their own development by setting goals and using effective strategies to achieve those goals (Bandura, 2006; Larson, 2011). Three small, but important bodies of literature suggest that young people learn self-advocacy skills from families, educators, and peers.

Families. Learning to advocate for one’s self can begin in childhood and researchers have found that family support is associated with the development of self-advocacy (Dowrick et al., 2005; Murray et al., 2014; Murray & Naranjo, 2008). Family members can encourage students to be successful, but they can also undermine self-advocacy by being overprotective and communicating worry or doubt about their child’s ability to succeed (Dowrick et al., 2005; Janiga & Costenbader, 2002). Murray and Naranjo (2008) found that successful high school students indicated that family support and being held accountable were crucial to their persistence in school. Students also discussed observing their parents advocate on their behalf. Researchers found that college students who categorized themselves as highly adjusted also had higher scores on self-reported measures of self-advocacy and family support (Murray et al., 2014).

Educators. The transition planning process from high school to adulthood is an important part of the spe-
cial education process. It is a natural time for students with disabilities to engage in self-advocacy behaviors. Murray and Naranjo (2008) described the experiences of 11 students with disabilities who graduated from a high-risk urban high school. The students said that, because they were willing to seek support from teachers and were persistent, sometimes going in after school, they eventually got the help that was necessary. Unfortunately, high school students do not always have this opportunity (Janiga & Costenbader, 2002; Trainor, 2005). In one study, college service coordinators from 74 colleges indicated that students were not prepared to self-advocate (Janiga & Costenbader, 2002). This was seen as the greatest weakness of transition planning at the time. Similarly, findings from a qualitative study indicated that many students did not practice self-advocacy in school (Trainor, 2005).

Peers. Very few studies have addressed the influence of peers on the development of self-advocacy and self-determination. In a study of high school students with disabilities in high-risk urban areas, Murray and Naranjo (2008) suggested that social isolation was a protective factor in graduating from high school because students were not interacting with deviant peers. College students with ADHD reported receiving more support from their family in contrast to a comparison group of college students without this diagnosis who were not interacting with deviant peers. College students with ADHD reported receiving more support from their family in contrast to a comparison group of college students without this diagnosis who were not interacting with deviant peers (Wilmshurst, Peele, & Wilmhurst, 2011). Using a focus group design, Dowrick et al. (2005) found that college students with disabilities learned self-advocacy skills from discussions with and observations of college-aged peers without disabilities. They also indicated that peers with disabilities provided them with information about services, supports, and advocacy (Dowrick et al., 2005).

Methodology

Grounded theory methods were utilized in this study. Grounded theory emphasizes theory building through a complex and emergent process versus research designs that use a priori assumptions and hypothesis testing (Charmaz, 2006; Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998). Since grounded theory is designed for generating theories of process, change, or sequence (Charmaz, 2006; Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998) it was ideal for the larger project from which these self-advocacy data were gleaned.

The purpose of the larger study was to develop a grounded theory about the development of a sense of belonging for diverse, first-year college students. The overarching research question for that study was: How do first-year students define and describe the development of a sense of belonging? The main study findings, including a theoretical model of belonging, are presented elsewhere (Vaccaro, Daly-Cano, & Newman, in press). This paper provides an in-depth analysis of one key aspect of our theoretical model that emerged from a subset of college students with disabilities—self-advocacy. This paper is not about belonging; it is an in-depth exploration of the key emergent study theme of self-advocacy. Qualitative designs in general, and grounded theory methods in particular, emphasize the importance of honoring emergent concepts even if they seem to relate only tangentially to an initial research question. Moreover, Strauss and Corbin (1990) argue that important properties can emerge in addition to, or distinct from, a larger theory. In this project, we found that self-advocacy was not only an integral part of belonging (Vaccaro et al., in press), but also an emergent topic worthy of in-depth analysis in its own right. Given that prior research has documented the importance of self-advocacy for educational success, we decided to share this subset of our research findings about college students learning and utilizing self-advocacy skills.

Students in the study were recruited from a public research university with 13,000 students, of which 3,000 were first-year students. Recruitment took place in introductory and general education courses, first-year residence halls, and diversity centers on campus (e.g., LGBTQ center, women’s center, disability services office, and Hillel). Our total sample was comprised of 51 first-year students. This paper offers an analysis of the experiences of the eight participants who self-identified as students with disabilities. Through our constant comparative (Charmaz, 2006; Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998) analytic method, we determined this subset of students had a story to tell about self-advocacy that differed from the rest of our study participants for whom the concept of self-advocacy did not emerge as salient.

The students with disabilities were diverse in age (18-32 years old), major, and disability. Students self-reported their disabilities as Asperger’s, bipolar disorder, obsessive compulsive disorder, retinopathy of prematurity, irritable bowel disease, and three had learning disabilities. Participants were given the opportunity to offer details about their disabilities on a demographic form and during interviews. Two students with learning disabilities shared more specific diagnoses. One had dyslexia and another described her learning disability as “memory and audio.” The third student chose not to offer any detail beyond “learning disability” and we respected that level of disclosure.
Participants were not very diverse in terms of race, ethnicity, or gender. Six students were white and two were students of color, one Latino and the other African American. Two men and six women with disabilities participated in the study. Information about socioeconomic status was not collected.

**Data Collection and Analysis**

Semi-structured, individual interviews served as the primary mode of data collection for this study. Students were provided detailed study information and invited to a series of two individual interviews, one in the fall semester and one in the spring. Eight students with disabilities participated in the fall and seven returned for a spring interview. In the first round of interviews, we asked broad questions such as:

- What is it like to be a student at X College?
- Can you talk about anything that happened before college that helped you to adjust?
- Were there any experiences or people who were especially important in influencing your transition and sense of belonging, either positively or negatively?

The spring protocol was slightly more focused. We used emergent themes from the first round of interviews to shape the questions. To more deeply explore the emergent theme of self-advocacy, we asked:

- If you could go back in time, what would you do differently/similarly?
- What would you tell another student with X disability about coming to this university?

In line with the grounded theory principle of constant comparative analysis (Charmaz, 2006; Glaser & Strauss, 1967; Strauss & Corbin, 1990, 1998), the research team engaged in a back and forth movement between data collection and analysis throughout the research process. The team met every other week to discuss themes that emerged during the interviews. Each member of the research team kept memos about the research process. Memos are a “researcher’s record of analysis, thoughts, interpretations, questions, and directions for further data collection” (Strauss & Corbin, 1990, p. 110). Memos guided research team discussions and served as a method of triangulation for the codes gleaned from the interview transcripts.

The interview transcripts were analyzed using open, axial, and selective coding (Strauss & Corbin, 1990, 1998). Researchers first read the transcripts in their entirety noting key topics in the form of potential open codes. Only topics that yielded 100% agreement among the research team were retained. Once the list of open codes was decided upon, we used axial coding to connect categories into broad themes under which all open codes were subsumed. This process of data analysis was repeated for the second round of interviews. Once open and axial codes were complete for both the fall and spring interviews, we engaged in selective coding to connect key categories and build a story about the self-advocacy experiences of students with disabilities. That process involved “selecting the core category, systematically relating it to other categories, validating those relationships [through discrepant case analysis and confirming examples], and filling in categories that need further refinement and development” (Strauss & Corbin, 1990, p. 116). The current paper offers an in-depth presentation of findings related to the category of self-advocacy yielded from axial coding. Participant narratives illustrate what students had to say about experiences prior to college that prepared them to self-advocate and their experiences of self-advocacy during the first year of college.

Several techniques were implemented to ensure trustworthiness of the study findings (Jones et al., 2013). First, for purposes of corroboration, data from the initial interviews were triangulated with data from the second interviews. The research team also engaged in analytic triangulation (Patton, 2002) whereby we coded each transcript independently and then revised the codes as a group. Once the axial coding frame for each round of interviews was solidified, two members of the research team re-read the transcripts and assigned axial codes. We only retained coded quotes that yielded 100% agreement from the researchers.

We utilized negative case analysis (Glesne, 1999; Jones et al., 2013) when a participant’s experiences ran counter to our emergent codes. Emergent themes from the interviews were also used for member checking. After interview two, students were invited to offer feedback on both the themes and research process. At biweekly meetings the team engaged in reflective discussions about our assumptions, concerns, and questions related to the experiences of college students with disabilities (Glesne, 1999; Jones et al., 2013) and how our own social identities and experiences shaped our analyses. The research team consisted of two full time faculty members, two Doctoral students, two Masters level students, and an undergraduate. Team members were women from a range of ages, ethnicities, and sexual orientations.
Findings

The following findings are organized in three sections. First, we offer evidence to show that participants understood the importance of self-advocacy in college. Second, we explicate how and from whom students learned self-advocacy skills. All of our participants learned self-advocacy prior to entering college through both intentional teachings and more subtle support messages from family and educators. Our final section describes how students engaged in self-advocacy in three distinct ways during the first year of college: proactively, reactively, and retrospectively.

The Importance of Self-Advocacy

During interviews, students were asked a variety of questions about their transition to the university and through their first year. In response to the questions about people or processes that assisted with their transition and advice they would offer to other students with disabilities, the concept of self-advocacy emerged regularly. The ability to self-advocate means students have the capacity to communicate needs and to make decisions about the support they need to achieve their goals (Stodden et al., 2003).

Key components of self-advocacy include knowledge of self (e.g., one's disability, strengths, weaknesses) and one's rights (Test et al., 2005). Students gave detailed examples of how they understood their disability and how they thought it was going to impact their lives on a university campus. Barry, a student with Obsessive Compulsive Disorder, described his apprehension about having a college roommate. He said:

It’s just nerve-wracking to be coming to school. I’m a fairly neat person, and it’s difficult enough. If I end up living with someone who’s a slob, it would freak me out. It’s just something that I have to take care of . . . But I have everything figured out so I can take care of myself.

Barry's comment about “having everything figured out” and his confidence in his ability to “take care of myself” allude to confidence in his self-advocacy skills. Later in the interview, he explained how his self-advocacy skills served him well in college when he said, “I am able to step up and get what I need in order to do well.”

Naomi described the difficulty of having Irritable Bowel Disease (IBD) and being around people who do not know about it. She said:

I have IBD. I do have to run to the bathroom a lot. It can’t be helped, [it’s] just part of it. Having to run down the hallway … it’s not noticeable really. Except my friend knows, which is good, because when I have to walk out of the conversation or something she knows . . . Otherwise it’s kind of awkward around new people who don’t know.

Her comment that “it can't be helped” shows that she understands her disability and she has developed strategies to deal with the awkwardness of leaving conversations abruptly. Self-awareness and coping strategies are both components of self-advocacy.

Jennifer described her understanding of herself and how she interacts with others. The following short quote chronicles her journey from self-dislike to an understanding and acceptance of her disability.

It took a long time to like myself because … I didn’t understand why I was different. I didn’t understand why I didn’t get it the way they got it. And until I could make those connections whether it was in work or whatever. Liking myself … made me comfortable enough to make connections with other people . . . like any time you have a learning disability you have to work harder . . . and you almost have to change what people think. Just because I have a learning disability doesn’t mean I am not intelligent. It just means I don’t think like you think. My connections are different.

This self-advocacy quote shows how understanding the nature of her disability (including her strengths and weaknesses) contributed to her self-acceptance and led to more effective social connections. It also highlights how she developed self-advocacy strategies to respond to others who made deficit assumptions based upon her learning disability.

Learning to Self-Advocate

Most students described how they learned to self-advocate from family members and educators in K-12 settings. Data from this study suggest there were three different contexts in which students learned self-advocacy from family and educators. First, students gave examples of general messages of support. Second, they gave examples of instances when they were intentionally taught to self-advocate in familial and K-12 school settings. Third, students were provided specific instructions to help them self-advocate in college.

Families. Parents encouraged their children to learn and utilize self-advocacy skills via both direct teachings and indirect messaging. Students talked about receiving general messages from family members about the challenges ahead in life. In the context
of those life challenges, family members also conveyed general messages of support such as: “We support you” and “We want you to know that you can succeed.” These informal and inspirational communications often served as the impetus for students to learn self-advocacy skills since they knew they would need them. Emily, a student with a learning disability, explained how her parents and family taught her to take advantage of different life opportunities. They shared their personal struggles with her so that she would learn life was full of hurdles that she would need to overcome. They also encouraged her to utilize a key self-advocacy strategy, asking for help when she needed it. She said:

I think my parents always told me that there is a lot to offer. You know? Like, there’s so many different things out there … and so many people that you can meet. So if you need help with [anything], or within my major, if I see other people, I can ask them [for help]. High school is different . . . because [in college] everything depends on you now.

Emily's quote suggests that she understood that in college she was required to self-advocate when she explained “everything depends on you now.”

Lisa, a student with bipolar disorder, received unconditional support from her family, which allowed her a sense of security when she attempted to self-advocate and be independent. She learned that she needed to advocate for herself, but she was never alone. She had the love and support of her family as a safety net if needed. She said:

My family is always there for me. So I know that if I need help I can always go to them and go home if I need to. So they’re helpful when it comes to transitioning of course. And my sister is always there so I can talk to her. And so if I ever have problems you know I have someone there. You know that’s good [for] transitioning.

While some students explained how general encouragement helped them learn to self-advocate, others were intentionally taught the importance of, and need for, self-advocacy. Often these lessons came in the form of tough love, whereby families required youth to learn to self-advocate by fending for themselves. Jessica talked about how her parents taught her to self-advocate by putting her in situations where they were not available to help. For instance, they intentionally placed Jessica in unfamiliar settings (i.e., summer camp) so she would be forced to self-advocate.

I got assigned an aide in kindergarten. One of the first things she taught me was that, if you can’t see something, you gotta go tell the teacher. So I’d be sitting there and I would say, “I can’t see the [board].” And she would be say, “I am not gonna go do it. You can’t see it.” So she would just sit and if I didn’t go do something it just stayed the way it was. So she made me go up and ask for whatever I needed. I think it was probably one of the best things they ever did . . . even though I was in kindergarten and I didn’t like it. I was like, “You’re such meanies; you’re making me do everything.” It actually really paid off in the later years.

Jessica understood that, while the process of learning to self-advocate was a challenge, it was an essential part of her journey toward being an independent adult. As she succeeded in each new setting, she gained the confidence to self-advocate anywhere, including college.

Finally, some young people were given deliberate preparation for collegiate level self-advocacy. Jessica and Ethan described how their parents told them to make contact with the disability services office before school started. Jessica shared, “I think my dad was like, ‘Yeah, …look up disabilities.’ I said, ‘Okay, Dad.’” Similarly, Ethan explained, “I got an email from the disability service. And my parents really encouraged me to join it so I did.”

Educators. Early in life, some of our participants had the good fortune of learning self-advocacy skills from teachers, aides, and other K-12 personnel. These early experiences were often challenging, but they helped students practice essential self-advocacy skills. Melissa, a student with a visual impairment, reflected upon her early memories of a kindergarten aide who was among the most influential people in her self-advocacy journey. She said:

My parents kind of started me off [learning self-advocacy skills] young . . . I was the biggest mama’s girl. I would get like physically sick if I was away from my mom. I wouldn’t do sleepovers or anything. And, they made me go to summer camp . . . in California and in Maine for one to two weeks … from third grade up. That’s how I got started. So for a 13-year-old to go out of state for two weeks, is [a challenge]. But if I didn’t do that, and didn’t get comfortable doing that, I wouldn’t have been an exchange student. If I wasn’t an exchange student, I probably couldn’t have gone so far [away] for college. You know? And I wouldn’t have been as comfortable [at college]. So, it was like a chain reaction. My parents had a plan; they wanted me to, like, branch out. They did a good job. It worked.

I think my parents always told me that there is a lot to offer. You know? Like, there’s so many different things out there . . . and so many people that you can meet. So if you need help with [anything], or within my major, if I see other people, I can ask them [for help]. High school is different . . . because [in college] everything depends on you now.
While Melissa referred to the aide and other educators as “meanies,” she now understood how valuable early self-advocacy training was to her ability to be independent and self-advocate in college.

Educators also provided students with specific self-advocacy training for college. Melissa described how her high school advisor encouraged her to be responsible for describing her visual impairment and requesting accommodations in high school, even though her advisor or parents could have taken care of it. Melissa’s advisor wanted her to practice self-advocacy before she arrived at college. She said:

\[
\text{My advisor would say, “You need to write a letter to your teachers explaining what your visual impairment is, how you see, what your accommodations are.” So I had to write the letter to the teachers. The teachers would still have to come to the Individual Education Program (IEP) meetings, but I was responsible for telling them on my own in a letter. And I think that was a really smart strategy because, when I came here [to college], I was able to call the student services office and say, “Okay, I need student services. What do I need as far as paperwork?”}
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Practicing these skills in high school made Melissa feel comfortable advocating in college by and for herself.

**Self-Advocacy in College: Proactive, Reactive and Retrospective**

The prior sections showed that our participants understood the need for self-advocacy and from whom they learned self-advocacy skills. Once students arrived at college, they approached self-advocacy in three different ways: proactively, reactively, and retrospectively.

**Proactive.** Students who engaged in proactive self-advocacy sought accommodations before needing them, typically before the semester began. Jessica discussed the importance of self-advocating but also the anxiety of doing it for the first time. She said:

\[
\text{Before I had my parents to help me with meetings … and this time I was all on my own … I had to . . . self-advocate, you know? But that’s obviously a skill you need for life and that’s a skill you learn in college. So, I was happy I was doing that. But, that was just overwhelming because I [had] to go in to talk to my teachers and make that first move.}
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Melissa, a marine biology major with a visual impairment, explained that she emailed professors before the start of the fall semester and then spoke with them in person to explain her accommodations. She shared:

\[
\text{I did it right after the semester started, but I emailed them in advance to let them know I was going to be in their class. And then, once I figured out when their office hours were, I set up an appointment. And, I still see them on a regular basis anyway just because it’s good to check in.}
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Another student with a learning disability, Emily, described her proactive efforts to self-advocate, which included taking the initiative to “know her surroundings” and utilize the disability services office.

**Ethan, a student with Asperger’s, described going to see a therapist in the summer before beginning college. He understood his disability and knew he would struggle socially in the new setting. Therefore, Ethan proactively scheduled appointments with a therapist to prepare himself emotionally for the transition. He said, “One thing that made me [uncomfortable] was the transition. I had been getting some therapy to figure some things out because I was kind of having some mental issues.” Jennifer discussed the importance of proactively looking for resources. She said, “I think [that it is] just really seeking stuff out. I’m a big resource person.”

**Retrospective.** Lisa talked about taking classes at her current college as a non-matriculating student to make sure she felt comfortable before officially enrolling. She said, “I took a class over the summer here. I took Physics 1 and Physics 2 just to get the ball rolling. That was great. I was a non-matriculating student last semester, so that got my feet wet with getting into [this] college.”

Emily talked about the importance of proactively getting to know the staff in the disability office so she had someone to talk to if she had a problem. She would advise other students with disabilities to be proactive in building relationships with the disability office staff. Emily stated:

\[
\text{It’s good to find your sources to know . . . your surroundings and where everything is. Try not to be shy, just talk, be outspoken so you can learn and know more things about this campus and the disability office . . . The more that you talk to them [the more] you will feel comfortable and you can go to them with any questions. They help you out a lot!}
\]
Narratives from Melissa, Emily, Ethan, Lisa and Jennifer suggest that, because they were socialized to understand the importance of self-advocacy earlier in life, they proactively self-advocated in college. However, being proactive was not the only way students self-advocated.

**Reactive.** In some cases, students had to step up and self-advocate in the face of a particular challenge or hurdle. We describe these students as reactively self-advocating. The following examples illustrate the ongoing adaptation required for effective self-advocacy. Even though all the students had prior experiences with self-advocacy, and many took steps to anticipate their needs, there were still emerging situations that required them to react.

Jennifer, a student with a learning disability, discussed negotiating with a professor about her test-taking accommodations. This discussion occurred because the faculty member was not offering her the accommodation she was due. She explained:

> I was like, “No, you said I could take my test, I get double the time.” And then he said to me, “Okay, the quiz should take 20 minutes so you can have 30 minutes.”  “No, no, no I get 40 minutes . . .” And he’s like, “Alright, well you can do it during the beginning of lab.” Then I said, “No, I’m not doing it during the beginning of lab. That cuts into my time to do the lab.”

Emily also gave an example of negotiating with a professor. While she had provided him with the appropriate documentation, the faculty member did not offer her the accommodations she needed. She said:

> One of my professors that I gave my papers to, he signed it but then didn’t let me go in another room to take my test because he thought I was going to cheat or something. I said the teaching assistant (TA) could come with, I didn’t really mind. I went to the disability office and talked to them and they contacted him and let him know. So then I had a separate room for my test.

Even though Emily and Jennifer both explained (in the previous section) how they proactively self-advocated, these quotes showed that there were instances where they also had to “react” to a situation where they were not receiving the support they needed.

Two other examples illustrate how students invented strategies to help them address emerging needs. Melissa described a solution to a visual problem in her chemistry lab:

> I have trouble reading the graduated cylinder, like the volume, so what we’ve done is I have a person who always comes over and I will say, “Well I think it says 6.25 milliliters,” and they’ll say, “that’s close but it actually says 6.5 milliliters.” So I have somebody double-check my measurements just because, with a visual impairment, it is hard to read through a glass graduated cylinder.

Jennifer, who has a learning disability, explained that in a nutrition class her instructor gave her the power-point slides in advance, but that was not quite working. So, she took notes on her copies of the power-point slides then she also obtained notes from the teaching assistant. After class, she compared both sets of notes. She explained how her strategy was “working out well because I’m able to see what I’m missing during the lecture.”

A negative case analysis (Glesne, 1999; Jones et al., 2013) illustrated a situation where a student needed to reactively self-advocate, but did not do so. Lisa, a student with bipolar disorder, was enrolled in a health psychology course. The course included a required research assignment involving participation in a health-related intervention. Lisa complained that she felt coerced into participating in an assignment that would require a level of disclosure she was uncomfortable with. She said:

> One of the things that we got graded on was . . . being guinea pigs in their research… and that was just so frustrating … I was just one of – another person on their, like, check-off list that they forced me to do, so I didn’t like that.

Lisa disclosed that the research (and corresponding assignment) was related to readiness to engage in behavioral change. To complete the class project, students were expected to disclose, and subsequently address, personal information that Lisa found intrusive and possibly emotionally distressing. This example illustrated a challenge where the requirements of a course touched a sensitive issue associated with the student’s disability. While she alluded to the fact that she could (or should) have addressed the situation, ultimately, Lisa did not manage to modify the situation to her satisfaction. This example illustrates a case where a student recognized a need to reactively self-advocate, but did not act accordingly.

**Retrospective.** In this section we describe a third way that students self-advocated: retrospectively. Some students self-advocated only after they had not “done it well.” In essence, these students learned from their mistakes and advocated for themselves after reflecting about their failures. Jessica, a nutrition student with
Melissa, a student with a visual impairment, explained her decision to modify her course load after learning that a schedule of five classes was too hard on her eyes. She said:

I have visited my disabilities counselor a couple of times to set up classes for the next term to make sure my classes are not too visually taxing. I am doing the five-year plan instead of the four-year, because I discovered this semester trying to do five classes was too much.

Naomi, a student with irritable bowel disease, became very ill at the end of the first semester. She had a severe attack of ulcerative colitis, which resulted in her having to go home often. When asked what she thought caused the serious attack, Naomi realized that several issues were involved. She said, “Sometimes I can’t handle the food in the cafeteria . . . that and probably just regular school work stress.” So now, at the beginning of the new semester, she was feeling much better. She said, “Yeah, I have everything under control. I figured some things out, brought some food from home.” In this case, Naomi had to reflect on the demands and resources of the campus that had an impact on her health and make some modifications that would allow her to manage her condition.

Finally, another student explained how she retrospectively learned to self-advocate in high school. This experience, in turn, promoted her self-advocacy in college. She explained:

My senior year in high school I was taking trigonometry and I was not very good at it. It took me a while to build up the courage to go to the math-tutoring center down the hall and ask for help. But once I did, that also helped me to prepare for college because here on campus they have tutoring included in your tuition. Oh my gosh! I don’t know what I would do without it.

It took some failures in trigonometry for this student to get the “courage” to self-advocate and utilize tutoring. In that setting, she retrospectively self-advocated, but the experience served as valuable part of her journey toward more proactive self-advocacy in college.

**Discussion and Recommendations**

Once in college, students with disabilities have to adjust to being more independent, adapt to a new environment, and make friends just like every other student. However, they also have the additional responsibility of contacting the disability services office, disclosing their disability, requesting accommodations, demonstrating a need for services, obtaining letters specifying their needed accommodations and then presenting those letters to professors. This is a complicated and time-consuming process, which may explain why so many students who received accommodations in secondary school fail to request them in college (Adams & Proctor, 2010; Anctil et al., 2008; Cavthon & Cole, 2010; Dong & Lucas, 2013; Salzer et al., 2008). In this section, we synthesize our findings regarding the learning and implementation of self-advocacy skills described by college students with disabilities. In addition to drawing general conclusions from our study, we also offer five specific recommendations for families and schools.

Data from our interviews suggest that students with different disabilities come to the university with different needs, as well as varying amounts of prior experience and competence self-advocating. Effectively self-advocating requires knowledge of self and having strategies for information gathering, networking and getting the system to acknowledge and respond to one’s needs (Stodden et al., 2003; Test et al., 2005). Many of the students that we interviewed talked about how their parents or K-12 educators got them thinking about and practicing self-advocacy skills from a young age. They gave examples of how they learned and honed self-advocacy skills in different contexts at different points in their life: school, summer camp, study abroad programs, and work. They discussed how these experiences were opportunities to practice advocating on their own, but always with the support of educators and family.

In learning a skill such as self-advocacy, it is important to acknowledge that many students will not use this skill without deliberate and repeated instruction. While there is no prior literature about repeated instruction of self-advocacy skills per se, other literature points to the importance of intentionality in the learning process. For instance, studies of interventions for executive function development have demonstrated improvements among 4-12 year olds when deliberately...
taught those skills (Diamond & Lee 2011). In addition to deliberate and repeated instruction, our data suggest that young people also need multiple opportunities to practice in school, home, and community settings with the support of teachers and family. If students wait to practice self-advocacy until they enter college, it may be too late.

Our findings call attention to the importance of families and educators teaching self-advocacy skills and requiring students to practice these skills throughout their education. While youth may resist these efforts (e.g., feel like adults are being “meanies”), the long-term benefits of self-advocacy skill development are paramount. While this conclusion might seem obvious, it is necessary given the research that shows many students with disabilities come to college unprepared to self-advocate because of past reliance on parents, special education teachers, and a secondary school system that did not require self-advocacy (Janiga & Costenbader, 2002).

Recommendation One
Elementary and secondary schools should consider offering self-advocacy workshops where parents and children learn the importance of self-advocacy skills. Workshops could incorporate role playing to develop skills in assertiveness. Our data on reactive self-advocacy suggest that students will encounter situations where they have to push back against authority figures who do not provide required accommodations.

Many parents may not understand the long-term benefits of teaching children to be self-aware and advocate for themselves in IEP meetings and in everyday school settings. Teaching these skills may be especially important for youth with non-visible disabilities. Self-advocacy workshops can help families understand how and when it is appropriate to encourage youth to self-advocate and how to help a child move toward independence. While participants in our study had the benefit of early socialization about the importance of self-advocacy, not all youth receive this type of education.

Recommendation Two
The IEP meeting can be a logical place for students to practice self-advocacy skills. In fact, the IDEIA 2004 amendment stipulates that transition be “a coordinated set of activities based on students’ strengths, preferences, and interests,” and requires that students should be included in transition planning activities (§300.43[a] [1-2]). It is considered a violation of IDEA/IDEIA if students have not been taught self-advocacy skills by the time they graduate from high school.

Barnard-Brak, Lechtenberger, and Lan (2010) found that students who participated in IEP meetings had higher levels of academic achievement in comparison to students who did not participate. However, student participation in an IEP meeting is not a guarantee of self-advocacy training. Even though students attended IEP meetings they did not always participate in meaningful ways (Trainor, 2008). Furthermore, a study of transition planning found that goals for self-advocacy were not included in the IEP of the majority of secondary students (Powers et al., 2005).

The IEP is one meeting a year and parents may feel responsible to advocate for their child during this meeting. While many parents feel it is their role to advocate, research shows that being overly protective or advocating on behalf of a child can undermine self-advocacy (Janiga & Costenbader, 2002).

Recommendation Three
In addition to encouraging students to practice specific self-advocacy skills, we recommend that family members also provide regular messages of support and affirmation. Participants in our study explained how generalized messages of support (e.g., “we support you”) let them know they were not alone as they “tried out” self-advocacy skills. They were confident as they practiced self-advocacy efforts because they knew that they had a familial safety net if things went awry. Our qualitative evidence is similar to the findings by Wilmshurst et al. (2011) showing college students with ADHD rated parental emotional support higher than peer support in relation to resilience and well-being in college.

Recommendation Four
Parents and secondary school teachers and counselors must prepare students for the reality of postsecondary education where they are wholly responsible for self-advocacy (Stodden et al., 2003). Moreover, educators in both secondary and postsecondary settings should constantly remind students that, while being proactive is essential, there will be times when they have to be reactive or retrospective and learn from their failures. Our study indicated that students engaged in different types of strategies in the process of self-advocating. At times they were proactive and anticipated needing to ask for accommodations. Other times, students used their self-advocacy skills reactively in a moment when they had to negotiate to receive accommodations they were due. Finally, students utilized retrospective self-advocacy after experiencing lack of success at a collegiate task. Our findings suggest that, despite early self-advocacy so-
cialization, college students still had a learning curve when they entered college.

**Recommendation Five**

In college, disability service providers and academic advisors should regularly have conversations with students about their efforts at self-advocacy. In those meetings, postsecondary educators can help students to assess the success of self-advocacy strategies and determine if modifications or other strategies would be more useful. In addition to these individualized conversations with students, postsecondary institutions should offer programs and workshops for first year students where they can practice, evaluate, and enhance their self-advocacy skills for collegiate success.

**Limitations and Suggestions for Future Research**

There are a number of limitations to this study. As with any qualitative research project, findings from this study are not generalizable. Study participants had a variety of non-visible disabilities. Thus, they were not representative of the heterogeneous population of students with disabilities. Participant demographics also did not reflect the racial, ethnic or gender diversity of students with disabilities. Information about socio-economic status was not collected so we are unable to explore if, or how, socio-economic status and self-advocacy were connected. Moreover, while the research team varied in ethnicity, level of education, and sexual orientation, they all identified as women.

Although grounded theory methods typically rely on intensive interviews, other data collection methods can be used. Our findings may have been enriched if we had collected data from other sources such as observations and interviews with parents and educators.

Participants reported feeling well adjusted in the college environment. While it is important to learn from students who are adapting well to the college environment, the literature suggests that this is not the experience for many students with disabilities, including many who are not registered with their campus disability offices. Future studies should include participants who successfully persist in postsecondary education with support from disability services, students who are successful without support from disability services, as well as those who drop out.

Our data provide evidence of the challenges students face in implementing self-advocacy in the college environment. Future research should delve more deeply into the process of learning to self-advocate in childhood and adolescence, identifying the range of skills that students bring to college and the coping mechanisms that emerge over the college years. Given the 2004 IDEIA amendment, research is needed to document the extent to which self-advocacy skills are incorporated into the IEP goals. Finally, longitudinal research could monitor student achievement of the self-advocacy goals set in the IEP over time.

**Conclusion**

College students with disabilities shared their perceptions about the importance of self-advocacy during their transition into college. These findings affirm the significance of teaching and reinforcing self-advocacy skills to youth well before they prepare to enter postsecondary settings. Family members and K-12 educators play an essential role in preparing youth to independently self-advocate in postsecondary education. Finally, narratives from eight students with disabilities begin to fill the gap in the higher education literature about the specific ways college students self-advocate once they arrive on campus. Our data suggest that students need the capacity to be proactive, reactive and retrospective when self-advocating in postsecondary environments.
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PRACTICE BRIEF
College Student for a Day: A Transition Program for High School Students with Disabilities

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Abstract
High school students with disabilities can benefit from early exposure to campus-based accommodations and supports as they transition to college. College Student for a Day (CSFAD) is an on-campus activity-based program that introduces high school students with disabilities to supports and accommodations on a college campus. This Practice Brief describes the planning, implementation and follow-up activities associated with the CSFAD program as well as outcome observations and implications for future programming.

Keywords: Students with disabilities, transition

Literature Review
Successful high school-to-college transition for students with disabilities is enhanced by a number of factors, including self-advocacy skills, strong relationships with faculty or staff members, and positive interactions with on-campus supports (Barber, 2012; National Council on Disability, 2012). High school students with disabilities who utilize these personal and university resources are more likely to attend college, increasing the likelihood that they will have higher rates of employment and earnings as adults (Barber, 2012; National Council on Disability, 2012). Thus, helping students with disabilities develop these types of self-advocacy and self-determination skills is an important part of the high school-to-college transition (Gil, 2007).

Despite knowledge about how to help students with disabilities (SWD) successfully navigate college environments, only 34% of high school SWD – versus 51% of high school students without disabilities – ever enroll in postsecondary education (Newman et al., 2011). Even greater disparities exist for students from low-income families: 70% of high school SWD from families with incomes of $50,000 or higher enroll in college, while matriculation for SWD from families with incomes of $25,000 or less is 50% (Newman et al., 2011). These disparities suggest the need for stronger high school-to-college transition programs for all SWD, but particularly for secondary SWD from low-income families (Newman et al., 2011).

Teaching SWD to advocate for appropriate accommodations and supports during high school may help their high school-to-college transition. Research suggests that SWD are more successful in college when they receive appropriate services, including mandated accommodations such as additional testing time and non-mandated supports such as tutoring (Barber, 2012; Gil, 2007; Newman et al., 2011). While these supports are often available on a campus, many SWD fail to access them because they do not disclose their disabilities when they enroll in college, thus making it difficult for colleges and universities to meet their needs (Barber, 2012; Gil, 2007; Newman et al., 2011).
Further, in college SWD become responsible for identifying services that can support their needs—unlike in high school when case managers, teachers, and parents advocate for them (Newman et al., 2011). It is important, therefore, for SWD to learn how to self-advocate by accessing campus-based accommodations and supports before they enter college.

College Student for a Day (CSFAD) is an activity that may help secondary SWD learn how to navigate campus supports and accommodations as part of their transitions to college. In this activity, students are invited for a daylong campus visit during which they participate in activities that introduce them to campus life. To date, only one published study reports the use of programming similar to CSFAD with high school students. Brezuleanu, Brezuleanu, and Iaţco (2013) designed campus-based lessons and activities to motivate high school students to consider agricultural study at a university after graduation. In their study, twenty-six high school students from three schools participated in demonstration classes during which they worked collaboratively with college students on agricultural activities. Participating high school students reported that the event influenced their decision to study at a university after graduation. The researchers attributed their results to the use of campus-based resources and partnerships, activity-based learning, and linking activities to learning objectives in demonstration classes. No published studies have reported the use of CSFAD as part of transition programming for SWD.

Description of the Problem

SWD from low-income families attend college at a significantly lower rate than their peers (Newman et al., 2011). When they do enroll in college, they may not disclose their disabilities to their institutions, thus limiting their access to available supports that can help them successfully matriculate (Barber, 2012; Gil, 2007; Newman et al., 2011). Ensuring that low-income SWD can self-advocate for services is important because research suggests that SWD are more successful in college when they receive appropriate supports and accommodations (Barber, 2012; Gil, 2007; National Council on Disability, 2012; Newman et al., 2011). There is a need, therefore, for interventions that can introduce SWD to college supports and accommodations as part of their transition planning. The purpose of the current paper is to describe the use of CSFAD as part of transition programming for high school SWD from low-income families.

Participant Demographics

CSFAD was a collaborative project between a university’s College of Education and two partner high schools: (1) a career academy with traditional high school students interested in health sciences careers; and (2) an alternative high school with at-risk students ages 17-22. CSFAD participants were freshmen (by credit hours) in special education classes at schools with an enrollment of more than 90% low-income students. Each high school selected ten freshmen that were interested in— but not committed to—attending college. In sum, twelve Black and eight Latino high school students from ages 14 to 19 participated. University faculty selected 10 Black and Latino undergraduate students as volunteer mentors. Eight mentors were education majors and two were business majors. Most mentors were seniors; one freshman and one sophomore also volunteered. Although efforts were made to recruit college SWD as mentors from a university’s Center for Students with Disabilities, none volunteered. However, one mentor reported that she received special education services in elementary school.

Institutional Partners/Resources

An internal diversity award that supported the university’s mission to develop urban, multicultural leaders funded this project. It was also supported by multiple campus offices that partnered for the event including the College of Education, food services, the campus bookstore, academic advising, financial aid, student services, the Writing Center, the Center for SWD, and individual faculty who invited CSFAD attendees to observe their university classes and allowed mentors to participate in the program in lieu of attending class.

Description of Practice

Planning and Training: After two meetings between university and high school faculty, program planning began by recruiting and training three key groups: (1) 10 student mentors from the College of Education and minority student groups; (2) 20 high school students with disabilities; and (3) five university offices that provided academic and social services to undergraduate students. Training occurred in this manner: (1) faculty explained the program and mentoring responsibilities to college mentors during a one-hour session; (2) high school students’ teachers explained the program and its expectations to SWD; and (3) faculty met with university academic and social support offices to explain the offices’ roles in CSFAD. Materials for CSFAD included four curricular components:
Ross, 2014), a scenario-based lesson that introduced students to campus services through online and activity-based learning (see Appendix); (b) “Sparking the Future” curriculum ([STF]; Washington Department of Education, 2014), a college and career readiness curriculum for students in grades 7-12; (c) The Pact (Davis, Jenkins, Hunt, & Page, 2002), a biography of three at-risk youth who fulfilled their high school goal of becoming medical doctors; and (d) a CSFAD syllabus that contained the schedule, expectations for the day, and the book citation for The Pact.

**Implementation:** CSFAD began at 9:00 am. Following a welcome and introductions, the day progressed in four distinct sessions of 45-120 minutes each. During the first session, faculty paired mentors and mentees, reviewed the syllabus, and gave directions for completing MAP scenarios; mentor pairs also completed an icebreaker activity from the STF curriculum. During the second session, mentor/mentee pairs collaboratively problem-solved MAP scenarios by using the Internet to locate campus resources. During the third session, mentoring pairs completed a scavenger hunt activity during which a SWD role-played a college student by visiting each of five campus offices and asking an office contact person a question related to the MAP scenario. The office contact person then signed the high school student’s list of scenarios, indicating that he or she successfully visited the office. During the final session, high school students returned to the College of Education where they listened to speakers from Financial Aid and the Center for Students with Disabilities, received a university t-shirt for their participation, and completed a survey about the day. CSFAD ended at 3:00 pm.

**Follow-up:** Schools were given a copy of the movie, The Pact, to watch with participating students when they finished reading the book. Schools continued to discuss students’ goals and include college transition planning for students who expressed an interest. Faculty and graduate students from the university’s school counseling and special education programs visited the partner high schools to conduct follow-up lessons from the STF curriculum on choosing a career and selecting a corresponding major. Faculty distributed certificates of participation to high school students and thank you notes to all participating campus offices, high school teachers, and college mentors.

**Evaluation of Observed Outcomes**

A program evaluation questionnaire was given to participants at the end of the CSFAD event. Of the twenty participants, 17 (85%) noted that attending the CSFAD program helped to change their minds about college. A majority of students, 16 (80%), who attended the CSFAD program indicated that they would “definitely” attend college, two students (10%) said “maybe,” and two (10%) were “still unsure.” Of the activities included in the CSFAD program, students rated their mentor highest ($M = 4.53, SD = .94$), followed by mentoring sessions ($M = 4.53, SD = .68$), lunch with the mentor ($M = 4.53, SD = .82$), the scavenger hunt ($M = 4.11, SD = .79$), and the classroom lessons ($M = 4.06, SD = .89$). The findings demonstrated that the students placed a higher value on the mentorship component of the CSFAD program than any of the other learning activities planned by the organizers.

Two themes about mentoring emerged from behavioral observations and students’ comments throughout the day: (1) Mentoring relationships formed naturally, and (2) mentoring pairs preferred small group instead of one-on-one time. Though mentors and mentees were originally paired together by program organizers, they tended to merge together into groups throughout the day. During the computer activity, for example, mentoring pairs gravitated toward small working groups instead of working one-on-one. Similarly, during the scavenger hunt, several mentors and their mentees joined together based on their interests in seeing specific places on campus. During the final session of the day, one high school student said, “That’s the way you should do it,” indicating that faculty should allow mentoring groups to form naturally.

After mentoring-related activities, the MAP scenario scavenger hunt was the next most highly rated aspect of the CSFAD program. The major theme that emerged from planning and implementing the scavenger hunt was individualization. That is, all participants individualized the scavenger hunt activity based on their interests. For example, mentoring groups chose which offices to visit and, in some cases, visited university classes and other campus locations such as the student athletic center and residence halls, which were not included on the MAP scenario list. In fact, only 12 of 20 students were able to visit all of the offices in the scenarios. Similarly, during planning, both mentors and campus partners (e.g., The Writing Center) individualized their services for the students. For instance, the bookstore independently placed The Pact - the CSFAD textbook - on bookshelves and had an employee retrieve the book for high school students when they showed them their syllabi, as they would for an undergraduate student.
Implications and Portability

The purpose of CSFAD was to provide activity-based learning and mentoring to better acquaint low-income SWD with accommodations and supports available on a university campus with the goal of increasing their enrollment and facilitating their transition to college. The experiential learning activity (scavenger hunt) and the presence of mentors were clearly the most well-received aspects of the program. This finding is consistent with existing data on mentoring, which suggests that youth mentoring can affect students’ attitudes when the mentoring has a specific academic objective (Eby, Allen, Evans, Ng, & DuBoix, 2008). In the current project, the students and mentors appeared to form relationships very quickly as mentors provided first-hand information about the campus and their experiences with the institution. Additionally, the scavenger hunt provided structure for high school students to be able to visit each office, yet mentors also had the flexibility to take them to other places of interest on campus. Finally, mentors provided high school students with modeling and support in approaching and speaking with representatives from each office. This offered the high school students an opportunity to practice the self-advocacy skills that are necessary for navigating disability services on a college campus.

One of the challenges encountered during the planning and implementation of the CSFAD program was related to mentor pairings. Due to inclement weather, ten students from one of the high schools arrived two hours late for the event. Since the organizers had already established mentoring pairs prior to the event, new pairs had to be created on-site to accommodate a smaller group. Once the tardy students arrived for the event, mentors returned to their originally planned pairs. Both the students and the mentors resisted the change in mentoring pairs, stating that they had already developed relationships and did not want to start “bonding” again. For future programs, it is recommended that mentor/student pairs develop organically during the first session of the day. Mentors can be instructed on ways to approach students and form pairs based on interest and comfort level.

Additionally, despite the activities designed to introduce students to financial aid information (visit to financial aid office and presentation by financial aid representative), almost one-half (40%) of the students reported they were unsure they would be able to pay for college. In future CSFAD programming, it is recommended that additional support be provided in the area of financing college. For instance, mentors can share their own experiences with financing their educations. Also, during the small group activity, time can be allotted for the mentors and students to explore financial aid and scholarship opportunities online.

The CSFAD program can be implemented on a variety of college campuses with assistance and support from participating high schools and campus partners. The program can be tailored to a particular college or university as a recruitment activity for SWD, or it can convey a general message to SWD about typical resources found on any college campus, as did the program described in this article. Longitudinal surveys of high school participants’ attitudes about college enrollment and knowledge of campus services could enhance understanding of program efficacy. Qualitative interviewing of mentors and mentees could inform researchers about the development of the mentor-mentee relationship and its importance in changing high school students’ attitudes about attending college. Future implementations of CSFAD at the current university will include more high school students and encourage ongoing relationships between undergraduate mentors and high school students through a formal, year-long mentoring program.
References


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Appendix

College Student for a Day Experiential Learning Activity Scenarios

Scenario A: You are enrolled in college and you need some extra help with writing a report in one of your classes. How do you find out what is available for you?

Activities: (1) Find the Writing Center. Where is it located (building and room)? (2) Talk to a representative at the Writing Center. (3) List one service that is provided by the Writing Center. (4) Find the Center for Students with Disabilities. Where is it located (building and room)? (5) Talk to a representative at the Center for Students with Disabilities. (6) List three services that the Center for Students with Disabilities provides for students.

Scenario B: You just finished your first week of classes. You wonder if there is anything else to do at college besides going to class. You think that becoming involved with extracurricular activities like sports or clubs might be helpful. How will you find out what is available to you?

Activities: (1) Find the Division of Student Affairs. Where is it located (building and room)? (2) Talk to a representative at the Division of Student Affairs and ask which extracurricular activities are available at the university. (3) List three activities that interest you.

Scenario C: You have a question about paying for college. How will you find the answer?

Activities: (1) Find the Financial Aid Office. Where is it located (building and room)? (2) Talk to a representative in the Financial Aid Office. (3) List two services that the Financial Aid Office provides.

Scenario D: For this class (College Student for a Day), you received a syllabus. On the syllabus is the name of the textbook that you will need for this class. The book is available at the campus bookstore.

Activities: (1) On what street is the bookstore located? (2) Name one item you can purchase at the bookstore (besides books).

Scenario E: You have heard that you need to “major” in something like business or education in college. What is a “major”? How will you find out what majors are available at this university?

Activities: (1) Find the Office for Academic Advising Support. Where is it located (building and room)? (2) Talk to a representative at the Office for Academic Advising Support. (3) List three majors that are offered at the university.
PRACTICE BRIEF

Groundwork for Success:
A College Transition Program for Students with ASD

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Abstract
This article describes the Transition Program implemented at a liberal arts college for newly enrolled students who have the diagnosis of autism spectrum disorder (ASD). The diagnosis of ASD has risen dramatically; consequently, more students are arriving on college campuses with needs related to social pragmatic functioning. The Transition Program is designed to address the needs of this group with the following elements: early contact with students, early acclimation to campus, parent alliances, specialized academic advising and housing assignment, and ongoing support during the first year. The Transition Program is discussed in terms of meeting an emerging need in higher education and in terms of its portability to other institutions.

Keywords: Autism, postsecondary education, transition, college orientation

James: Recently graduated from high school, nineteen-year-old James is anticipating his new life at a mid-sized university. Diagnosed with autism spectrum disorder (ASD) as a child, James benefitted from special education services and supportive parents. With strengths in memory and computer applications, James has islands of capability. While his high school grades were excellent, James has difficulty with social pragmatics—the art of communication. If James finds the right combination of support, his strengths may flourish in college, but he and his family are not certain if he is ready for the transition or what kind of programming would serve him best. This article describes a college transition program designed to support students with ASD—like James.

Attaining a college education is a goal for many American high school students, and this goal brings both hope and uncertainty for students like James. The pressure and competition that strong students experience in their college application year is well known. Less well known is the growing trend for students with disabilities to seek postsecondary education. A national longitudinal study by the U.S. Department of Education (2011) found that 60% of students with disabilities enrolled in a postsecondary institution compared to 67% of their neurotypical peers. Sixty-five percent of students with disabilities who graduate from high school attend an institution of higher learning; however, they complete fewer degrees than their peers (Newman et al., 2011), which suggests that there is room for improvement regarding service delivery for this diverse group.

Summary of Relevant Literature
ASD is a broad term including disorders formerly known as Asperger's syndrome, autism, and pervasive developmental disorder. As defined in the DSM 5, the central feature of ASD is a dysfunction in the social realm and the disorder ranges from mild to severe and occurs at all levels of intelligence (American Psychiatric Association [APA], 2013). Approximately four males are diagnosed with ASD for every one female and the gap expands with increasing intelligence (Rivet, 2011), suggesting that the college population with ASD is likely to be predominantly male.
With steadily increasing prevalence estimates, ASD is a fast growing member of the disability category. In 2014 the Center for Disease Control (CDC) reported that the rate of diagnosis for individuals with autism spectrum disorder climbed to one in 68, which represents a 20% increase in two years (CDC, 2014). ASD has been a top research priority spurring significant discovery in the last decade, and recommended future directions include identifying the needs of adults with ASD (Damiano et al., 2014). Heightened awareness of ASD symptoms, improved special education programs in schools, and greater access to therapies and medications have likely contributed to a rise in numbers of college students with ASD, a trend that is expected to continue (Wolf, Brown, & Bork, 2009).

Institutions of higher education have the financial and ethical interest to retain admitted students, thus they offer programs to smooth the transition of first year students (College Board, 2011). Ninety-six percent of colleges report having formal orientation programs for their new students (Barefoot, 2005). Recognizing the importance of high school to college transition, institutions strive to create learning environments in which students can connect with peers, faculty, and staff, thus increasing the chances of persistence to graduation (Astin, 1984; DeAngelis, 2003; Spady, 1971; Sparkman, Maudling, & Roberts, 2012; Tinto, 1975). Thematic programs stem from specific student needs and campus cultures. Variations now include outdoor adventure programs (Gass, Garvey, & Sugereman, 2003) and online programs (Cho, 2012; Dixon et al., 2012).

In 2010, the U.S. Department of Education awarded $11 million in grants to 27 postsecondary institutions to develop and assess transition programs for students with intellectual disability, some of whom also have ASD. No such program exists to study transition for students with ASD who have average or above average intelligence (Pinder-Amaker, 2014); however, it is hypothesized that advanced preparation, particularly in social skills, is essential for success of this group (Ciccantelli, 2011). The Transition Program described in this article serves students on the spectrum whose intelligence is within the normal range.

**Depiction of Problem**

Transitioning to the college environment can be challenging for all first year students, including those with disabilities, and making social connections is critical to their success (Shepler & Woosley, 2012). What happens when an individual has difficulty connecting with others because he or she struggles with a neurobiological disorder like ASD? A student like this may desire social acceptance and friendship but be reluctant to approach and befriend others due to a personal history of social challenge. Areas of challenge for individuals who have a diagnosis of ASD include social reciprocity, reading social situations, empathizing, understanding the minds and motivations of others, sensory sensitivity, and engaging appropriately in social conversations (CDC, 2014; Pennington, Cullinan, & Southern, 2014). These challenges persist in college (Gobbo & Shmulsky, 2013). In addition to social challenges, clinical anxiety is a challenge for many individuals with ASD, with co-occurrence estimates of 40% (van Steensel, et al, 2011). The hallmark difficulties of ASD can interfere with the development of social connections, thus specific programming to meet the needs of this group is critical for success.

**Participant Demographics and Institutional Partners/Resources**

This article describes a Transition Program that has been implemented at a small liberal arts college. Facilitated by a director, this specialized program operates within the framework of the larger college orientation run by the division of Student Affairs. Each year 25-30 students who have a documented ASD and normal intelligence, 85% of whom are male, participate in the program voluntarily.

**Description of Practice: Transition Program for College Students with ASD**

Entering college can be a challenge for someone like James with a student profile similar to the one described at the introduction of this article. While James’s academic strengths will help him in class, his social challenges can undermine success if he does not find a niche. A transition program helps all students adjust, but it is of particular value to students like James who live with a condition that affects social functioning.

Empirical evidence about how to best facilitate the college success of learners with ASD is spotty (Pinder-Amaker, 2014); however, stepped-up transitional support as well as the coordination of pre-existing college services have been cited as a promising steps that institutions can take. For example, colleges typically offer disability services, mental health counseling, career counseling, and health services, each of which can meet key ASD-related needs (Longtin, 2014). The following six practices, adapted from our programming at a small liberal arts college (Landmark College, 2014), are presented as suggestions that postsecondary institutions could adopt. While these elements are designed to support students who have a spectrum condition, they may be helpful for other learners who are at-risk during the first year, too.
Six Transition Program Practices

1. Contact students and their parents before the beginning of the academic year
2. Acclimate small groups of students to campus early
3. Build alliances with parents
4. Select trained advisors
5. Predict and meet residential needs
6. Provide ongoing support during the first year

Contact students and parents early. Communicating with students before they arrive on campus can smooth the transition. Given the nature of ASD, students with this disorder may be less likely than their neurotypical peers to ask questions and discuss concerns related to the program and its expectations. Thus, it is helpful for the institution to initiate contact.

Students who enroll at the College are asked to disclose diagnosed conditions that may affect their learning. For students who self-identify as having ASD during the application process, early communication begins through the disability services office. College representatives share information and get to know students through a combination of telephone calls and online materials. This first step allows disability services to begin to coordinate resources, such as residential life, counseling, and health services, that the student will need when he or she arrives on campus.

Orient small groups to campus early. An early, small scale orientation in which students and families can navigate and see the campus and its support services is a critical element in the transition process for students with ASD. Allowing students and their parents to become familiar with the campus can reduce anticipatory anxiety and give students an early start in connecting with supports they may need or want. An early visit can include informational sessions on advising, wellness, residential life, as well as fun, social group-building activities.

Hiring successful students from the prior academic year to serve as orientation leaders can add credibility and perspective to orientation. In addition to acting as role models, student orientation leaders can share an insider’s view on the “unwritten” social culture of the institution, potentially demystifying this aspect for new students. When possible, it may be beneficial to retain student orientation leaders to serve as mentors for students with ASD during their first year.

Build alliances with parents. Parent involvement in the college education of students in the millennial generation is high, and parent involvement for students with ASD—or any learning difference—may be even greater. In Students with Asperger Syndrome: A Guide for College Personnel, Wolf et al. (2009) emphasize the importance of parent collaboration in the process of helping a student transition to college. Parents of students with ASD may have been advocating for their sons and daughters for years and they can provide insight and support for the transition to college (Carter, Austin, & Trainor, 2012).

Given the role that parents can—and likely will—be playing in their son or daughter’s education, it may be advantageous to speak with parents of incoming students. Because ASD manifests in a variety of ways, parents can provide useful background information on the student strengths and concerns. In addition to speaking with parents about the profiles of their students, it can be helpful to offer a disability-specific orientation session for parents. This session can preview the successes and stumbling blocks that are typically encountered for students with ASD during the first year and highlight the resources available on campus. Federal Educational Records Privacy Act (FERPA) guidelines for confidentiality must be followed; however, there is room within these guidelines for an appropriate exchange of information between the institution and parents.

Select trained advisors. It is advantageous to assign students with ASD to an advisor who understands the disorder, thus it may be helpful for disability offices to collaborate with advising staff who have a background in learning disabilities, special education, education, or related fields. Advisors who are well-matched to students who have ASD will understand how the disorder can affect academic outcomes, notice problems in their earliest stages, be willing to provide direct feedback on unconventional behavior, and encourage students to develop self-knowledge and self-advocacy skills. With increasing ASD awareness—both in academic research and in popular culture—there may be opportunities for advisors to bolster their background knowledge via speaker events, workshops, and symposia on ASD at the institution or in the wider community.

Predict and meet residential needs. The challenge of living in a shared space that all college students face may be magnified for students with ASD. Concerns related to the behavior of fellow residents, room cleanliness, shared bathroom space, laundry, and noise could arise for students with ASD. Because students with ASD can miss or misinterpret social cues, acclimation to the micro-culture of the residential space
can be a difficult process. Thus, steps to help undergraduates adjust to residential life norms and practices are particularly important for students with ASD. To support students with ASD during this transition, it may be beneficial to consider the following when making housing assignments:

- Sensory load: Many students with ASD experience heightened sensitivity to noise levels, types of lighting, and other stimuli. Reduced stimulation is often preferable. For example, carpeted spaces with incandescent lighting are often preferable to noisier tiled floors and fluorescent lighting.
- Roommate selection: When possible, pair students who have ASD with roommates who are able and willing to understand the manifestation of ASD. If the roommate possesses strong communication skills, the negotiation of minor issues like moving furniture, bedtimes, noise level, and other living space decisions will be smoother.
- Severity of symptoms: While it is often preferable and practical to assign a student with ASD to room with another student, a single room may be considered for those students with the most intense symptoms. Singles can minimize the social stress of navigating close living relationship; however, this may not represent the optimal opportunity for social growth. Thus, the assignment of singles is best made on a case-by-case basis.
- Experience of residential staff: If possible, assign students to a residence hall with staff who have experience recognizing and working with ASD-related behavior.

**Provide ongoing support during the first year.**

In addition to the previous five suggestions that happen early in a student’s transition to campus, it is beneficial to extend support after orientation to enhance the student’s likelihood of a successful first year. If the institution offers organizational support, it may be possible to provide mentoring from students trained in the needs of students with ASD and to offer ongoing evening sessions on topics germane to the needs of students with ASD. “Television coaching” was used effectively to teach social skills to college students with ASD (Trammel, 2013) and digital resources could be used to develop and reinforce students’ social skills year-round. Requiring less time and support, the disability office can compile a list of instructors who use a universal design approach to teaching and learning and counselors who specialize in working with individuals with ASD, learning differences, and anxiety—this low-cost option may help students on the spectrum find useful campus resources that already exist.

**Evaluation of Observed Outcomes**

Although formal assessment has not been completed, the Transition Program described in this article has shown promising outcomes in terms of supporting students. In the first year, 30 students participated in the orientation program and their academic performance was tracked. Twenty-seven (90%) completed the first year and were eligible to enroll in the second year. For the same time period, 84% of all first year students at the institution completed year one. The cumulative first year GPA for participants in the Transition Program was 2.74, which was higher than the overall GPA of 2.58 for first year students at the institution. Thirteen participants earned a GPA of 3.0 or greater; 10 earned a GPA between 2.0 to 2.99; and four earned a GPA below a 2.0, which placed them on academic probation. These descriptive data indicate that students in the Transition Program achieved academic success at a level that was similar to their peers at the institution.

Anecdotally, students with ASD, their parents, and instructors at the College voiced satisfaction about the Transition Program. The institution has renewed the program after its first two years and early figures suggest that participating students are retained at a rate that meets or exceeds their peers at the institution.

A systematic research study is underway at the College to identify factors related to success for college students with ASD. The results of that investigation will contribute to knowledge about the transitional needs of this group and allow further refinements to the Transition Program. Specifically, investigators are correlating the executive function, anxiety, attentional, and intellectual profiles of incoming first year students who have ASD with their academic success in their first year of college. The goal of this research is to clarify successful and at-risk profiles within the college-bound ASD population so that services can be improved. For example, researchers intend to determine whether a clinical level of anxiety predicts academic success or failure for students with ASD. If anxiety predicts failure, then it would be important to increase screening and treatment services. If, however, anxiety is unrelated to academic performance, then institutional resources may be better used elsewhere.

It is hoped that this discovery research will enable postsecondary institutions, families, and educational consultants to craft more effective transition plans for neurodiverse learners.
Implications and Portability

Providing specialized programs to support the transition to college for students with ASD requires financial support, time commitment, and resolve on the part of institutions and its members. The primary outcome could be increased retention and graduation of admitted students with ASD. This article contains practical suggestions for facilitating students’ transition to college that can be adapted for different levels of institutional support. An interested faculty member or advisor may adopt one or two practices from these suggestions—or an institution may use the model described here as a launching point for its own full-scale ASD transition program.

From philosophical and practical standpoints, it is in the best interest of colleges and universities to provide programming that supports the successful transition of students with ASD. Ideals of access to a liberal education for all pervade the culture of colleges and universities in the U.S., which are often at the forefront of movements to expand access for historically marginalized groups. Thus, it makes sense for postsecondary institutions to ensure that all inquiring minds with cognitive potential can achieve success inside their doors. On the practical side, retention is a significant cost saver to the institution. Keeping a student in college until he or she graduates generally costs less than recruiting a new student to replace one who has left (Ackerman & Schribrowsky, 2007-2008). Strong retention rates are an excellent indicator that the institution delivers adequate services to its students, thus strengthening the reputation and appeal of the institution.

References


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Abstract
College students with disabilities face various barriers to academic and social engagement. The present project was conducted based on principles of participatory action research (PAR) using Photovoice method with six students, gathering images representing such barriers, and developing narratives to describe the problems as well as possible ways to address them. With follow-up actions, the project prompted a number of attitudinal and architectural changes on campus. In addition, the participating students reported empowering effects of the project on themselves, consistent with the premise of PAR, indicating a potential of PAR with Photovoice methodology in both empowering students with disabilities and transforming university campuses to more inclusive environment. Photovoice can be employed by disability service providers to encourage students to be their own advocates to tell their stories about campus accessibility. Students’ perspectives can inform public policy to address barriers to be more inclusive to higher education that they experience.

Keywords: Photovoice, student with disability, inclusion, attitudinal changes, postsecondary education

Today an estimated 11% of undergraduate students in the U.S.—more than two million—report having some type of disability (U.S. Government Accountability Office, 2009). However, students with disabilities continue to face challenges such as negative attitudes from others, physical barriers on campus, lack of appropriate services, and programs that result in low attendance and graduation rates when compared to students without disabilities (Dowrick, Anderson, Heyer, & Acosta, 2005). Statistics suggest that only 12.4% of individuals with disabilities possess college degree or higher while 31.7% of those without disabilities possess a college degree or higher (American Community Survey, 2012).

There may be many reasons for this disparity. Some students face structural barriers, such as lack of ramps or elevators in multi-level school buildings, heavy doors, lack of automatic doors, inaccessible washrooms, and inaccessible transportation to and from school (Agarwal, 2011). While, some are affected by the lack of awareness on the part of faculty, administration, and staff about the availability of accommodations (Eckes & Ochoa, 2005). Some students experience feelings of isolation on campus (Agarwal, 2011). Stodden and Jones (2002) noted, however, that the most influential barrier to students with disabilities was the stereotypically negative attitudes about people with disabilities and their ability to be successful in higher education. This sort of campus climate that postsecondary students with disabilities experience coincides with the societal environment that disability community has experienced generally, which has led to a long history of segregation and exclusion.

Statement of the Problem
Despite the equal access opportunity and all the protections and accommodations provided to students with disabilities in postsecondary education, there still exist social and physical barriers on the campus environment which prevent students with disabilities to achieve positive outcomes in higher education.
Description of the Project

The present project was initiated by the university office of disability services taking advantage of the potency of participatory action research (PAR) in light of the mission of disability services in the university setting. Consistent with the framework of PAR, which we will delineate below, our goal was twofold: (1) to empower participating students with disabilities through their participation in the project; and (2) to instigate changes for the university to become more inclusive. We will also describe Photovoice as a PAR method in the following section.

PAR seeks to gain a greater understanding of the issues that people or communities face by actively involving community members in all phases of research process, aiming at social change (e.g., Minkler & Wallerstein, 2003). PAR presents opportunities for participants to gain empowerment through their involvement in the research process (Israel, Schultz, Parker, & Becker, 1998, cited in Minkler & Wallerstein 2003). PAR approaches have been increasingly used by researchers often with marginalized groups.

The specific participatory approach that we drew upon was a visual methodology called Photovoice (Wang & Burris, 1997). It is a participatory evaluation method in which participants, who are often silenced in the political sphere, are given cameras to capture images that convey their feelings, beliefs, and experiences, and narrate their everyday experiences using their own words (Foster-Fishman, Nowell, Deacon, Nievar, & McCann, 2005), allowing data that are rooted in the needs and interests of the people who are users of the research. Grounded in principles of empowerment, the benefit of Photovoice method is that it empowers individuals to communicate about issues that impact their lives and concerns facing their community through photos and associated narratives, and can share their own perspectives as people affected by it.

As with the case with PAR, Photovoice has been employed in a wide range of projects involving marginalized populations across the U.S. and the world. Photovoice has been utilized in projects involving individuals with various disabilities and chronic conditions, such as intellectual (e.g., Jurkowski & Paul-Ward, 2007), psychiatric (e.g., Cabassa, Nicasio, & Whitley, 2013), physical (e.g., Balcazar, Keys, & Suarez-Balcazar, 2001), tuberculosis (e.g., de Heer, Moya & Lacson, 2008), and HIV/AIDS (e.g., Hegenrather, Rhodes, & Clark, 2006). The Photovoice approach can identify pertinent issues, raise awareness, and suggest programs or policy changes. In addition, participants can be empowered to trigger system changes as it empowers them to advocate for change in their own lives and in the lives of others.

Photovoice has been applied in various projects taking place on campuses across the U.S., including the University of South Carolina, Eastern Michigan University, University of Arkansas at Little Rock, and Syracuse University, disseminating mostly through exhibitions, experiences, and viewpoints of postsecondary students living with disabilities through photographs, poems, and works of art (Taishoff Center for Inclusive Higher Education, 2011). The present project was conducted at a university where nearly 80% of the student population is Hispanic, who are underrepresented in higher education generally, and thus, could be considered to benefit from enhanced self-advocacy.

Participants

Six students (two female, four male; age range: 20s-50s; three Hispanic, three non-Hispanic White; four undergraduate, two graduate) with a variety of disabilities (vision, hearing, mobility, seizure, and developmental) volunteered to participate in the project responding to recruitment which targeted students with disabilities by the office of disability services through an organization of students with disabilities at a southwestern university.

Procedure

Once recruited, training was conducted by the faculty advisor (co-author), introducing the participants to Photovoice method, including how to select photographs and develop narratives concerning the photograph, and going over ethical issues that might arise, such as confidentiality (see Table 2). The group was brought together three times to discuss a variety of obstacles found on campus. They included stereotypical signage at the library, lack of inclusion at the university football games, hazardous conditions when traversing the campus on foot with low vision, and obstacles to accessing restrooms on campus using motorized mobility devices.

After sharing and discussing the photographs, works from each participant were selected for further discussion in the next session. When the participants took another round of photographs and reconvened, they identified common themes emerging in the second round. During the discussion, four photos were selected per participant. Participants who had photographs with similar themes teamed up and developed a story that represented perspectives of the multiple participants. For each photograph selected, participants developed a story as well as a description as to how the issue could be effectively addressed using the SHOWeD method (de Heer et al., 2008), applying the following questions: What do you see happening here? What is really happening here? How does this...
relate to our lives? Why does this situation, concern, or strength exist? What can we do about it? Participants then presented their photographs and narratives to the group to spark critical dialogue.

These photographs as well as the narratives were compiled as a multimedia presentation and delivered at the university’s 6th annual Ability Awareness Week, which was an event aimed to raise awareness about issues concerning students with disabilities. The presentation was featured in a campus online newsletter (Perez, 2013), and in an evaluation survey about the entire event, 75% of the respondents rated the presentation at the highest rank on a 5-point Likert scale ranging from 5 (excellent) to 1 (poor).

Outcomes

The Photovoice project has brought about several important outcomes that can be grouped into two interrelated categories: participant-related outcomes and campus-related outcomes (Table 1).

Participant-Related Outcomes

Overall, participating students reported feeling empowered as a result of participating in the project. Some experienced empowerment, such as gaining validation on their perspectives and needs from general campus stakeholders: “It was...the first time I truly felt that people...were taking us and our situations seriously” (Norma’), “Frankly, I was surprised” (Maria). Others related empowerment in terms of achieving personal growth in the process: “I did grow throughout the Photovoice process from the initial connection with other participants” (Dolores); “It helped raise awareness by giving me a voice that everyone can see” (Norma). Participants also reported the resulting recognition that they are effective agents that have the potential to affect the physical and social environment that they live in: “[I experienced] empowering feeling of making a difference on campus as various issues were addressed and dealt with by [the university] administration” (Dolores). Feedback from participants also variously pointed out the potency of the Photovoice method as a multimedia advocacy tool: “A picture is worth a thousand words” (Dolores), “I think Photovoice has opened up an avenue to people that normally wouldn’t be as apt to speak about what it is they need to discuss because they feel like they won’t be heard” (Maria).

Campus-related outcomes

Participants reported that the Photovoice project had brought important changes to the campus environment as well. According to their feedback, their peers were more aware of how to assist them because of the increased knowledge about the challenges that they tended to face. Some noted changes in ways instructors interacted with students with disabilities.

In addition, six changes to the physical environment have been implemented or have planned implementation, prompted by the project. For example, a participant who is blind captured how a shrub had overgrown some stairs and could not only be an obstacle but also a danger (Figure 1). When the director of the university disability services office presented the photograph to the facilities departments at the university, the shrub was removed immediately. Another example that is shown in Figure 2 is a stereotyping signage at the university library that did not reflect the people first language and principle of universal design. Use of the word “handicap” has been associated with stereotypical negative perceptions. Signage is changing to show universal design qualities and helping overcome stereotypical signage and language used on campus. The photograph was presented by the director of the disability service office to the building manager of the library. It was replaced with the signage shown in Figure 3 immediately. The remaining problems and actions taken involved service animals not allowed in an area within campus, an end of sidewalk not detectable universally, a dangerous building structure, and a university service vehicle blocking ADA access point (see Table 1 for detail).

Implications

Consistent with the principles of PAR our Photovoice project resulted in various outcomes related to empowerment in the participants and changes towards inclusive campus environment for students with disabilities with regard to both soft (attitudinal) and hard (architectural/physical environmental) aspects. Participants articulated with their photographs and associated narratives what constituted barriers to their full participation in the campus community. By way of the disability service office, the participants successfully brought about changes that were warranted. Considering these positive outcomes in participants and the campus environment, another round of Photovoice project is being planned with approximately 15 participants at the present university.

The medium of photograph was shown to have a unique potency to change than the more traditional method of using verbal requests, as pointed out in

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1 All names of the six participating students are pseudonyms.
Table 1

Outcomes of Photovoice Project

Participant-related outcomes

1. Being heard and validated
   “I think we had a wakeup call for all of the people, and when they see the issues we deal with that it had a much bigger impact on them”
   “I felt [for the] first time we had a voice”
   “It was probably the first time I truly felt that people on [the university] campus were taking us and our situations seriously”

2. Personal growth
   “I did grow throughout the Photovoice process from the initial connection with other participants through the empowering feeling of making a difference on campus as various issues were addressed and dealt with by [the university] administration”
   “It helped raise awareness by giving me a voice that everyone can see”

3. Potency of Photovoice
   “A picture is worth a thousand words”
   “With Photovoice...we got a quick response and [issues] were addressed. Frankly, I was surprised”
   “I think Photovoice has opened up an avenue to people that normally wouldn’t be as apt to speak about what it is they need to discuss”
   “It makes a big difference when we can show what we are dealing with not just talking about it”

Campus-related outcomes

Problem 1: Shrub overgrown over outside stairs, presenting danger to individuals with vision impairment
   Action: Photo was presented to university facilities department by disability service director; shrub was removed immediately

Problem 2: Building door signage does not reflect universal design principle
   Action: Photo was presented to building manager by disability service director; signage was replaced immediately

Problem 3: Service animal not allowed in university football stadium; seating reserved for persons with disabilities isolated from other seats
   Action: Disability service office working with university special events department for improvement

Problem 4: End of sidewalk not detectable to individuals with vision impairment
   Action: Disability service director alerted university planning and construction department and suggested the use of tactile surfaces that are detectable to cane; adding color contrasting to surroundings

Problem 5: Stairway with underneath space not detectable to cane, presenting danger to individuals with visual impairment
   Action: Photo was presented to facilities department by disability service director; alteration pending, awaiting funds

Problem 6: Delivery vehicle to student union blocking ADA access point for persons with mobility devices
   Action: Union staff was provided with ADA etiquette training by disability service director

Other changes reported by participants
   “I saw a difference in how professors treated persons with disabilities”
   “I feel that the campus is much more disability friendly and person first language sensitive”
   “My peers became more aware of how to help us that have mobility issues and how to help us maneuver in a more safe environment”
Table 2

**Photovoice Steps**

1. **Form an Advisory Committee**  
   Here you form an Advisory Committee, an ad-hoc group of decision makers and community leaders who work jointly with the project to provide access to those institutions the group wants to present their final stories and photos. The committee serves as gatekeepers to decision makers who can act on the ideas and recommendations of participants.

2. **Recruit Photovoice participants**  
   Recruit participants who broadly reflect the community you want to portray. We recommend that the group include eight to 10 participants. This provides enough people to generate good dynamics and discussions within the group yet is small enough to hold group meetings and is not time-consuming for participants.

3. **Conduct a participant orientation**  
   Summarize the basics of the Photovoice method. Discuss ethics, the power of the photographs, participant safety, and obtain consent.

4. **Have participants take photographs**  
   Present “framing questions” to serve as a guideline for participants to take photos that are meaningful to them. Framing questions will guide the first round of photos to be taken by the group. New framing questions will be identified each time the group meets to share and discuss their photos and those new questions will guide the next round of picture taking.

5. **Convene participant meetings for photograph discussion**  
   Participants meet as a group and receive their photos, select two to three photos, complete SHOWeD worksheets and discuss selected photos with the groups.

6. **Repeat steps 4 and 5 several times**  
   Audiotape the discussion to use as potential data analysis and research information purposes (and also as a substitute for written worksheets when literacy is a concern). Facilitation of group discussion yields reflection, approaches, and issues identification. After several rounds, participants meet as a group to further discuss the selected photos and worksheets (e.g., with six participants and four iterations this would yield a total of 72 photos and worksheets, of which 24 are the focus for further discussion during this session). One photo and attached worksheet from each person is selected by the group and saved for further group discussion at a later date.

7. **Analyze data**  
   Codify topics through reflection to facilitate discussion about the selected set of photos and worksheets (if necessary, more may be chosen from the larger set of photos). Participants revise worksheets for photos to be shared publicly, which reflect the approaches reached during the project.

8. **Prepare presentations to address policy and decision makers**  
   Participants select the photos and stories to be shared publicly, which reflect the approaches reached during the project. A photo gallery of their work is finalized for public presentations. The advisory committee assists with identifying presentation venues.

9. **Disseminate findings through exhibitions and other outreach events**  
   The Photovoice exhibit gallery is presented by the project participants to target audiences of policy and decision-makers. The project documents outreach efforts and outcomes and disseminates findings through publications, “Calls to Action,” social media, and educational resources.
Figure 1. The Hidden Obstacle.
Pablo stated: “Obstacles come in all shapes and forms when one does not have the vision to see the obstacle before it hits them in the face. One is upon this bush before one knows that the bush exists which can cause a hazard including falling or risking eye injury. To the non-disabled person, the obstacle is not readily apparent.”

Figure 2. Automatic or Handicap?
Dolores stated: “The question is: Is this door automatic or handicapped? Can it be both? Also, it stereotypes who should use the door by not incorporating universal design. At this point, it is neither automatic nor handicapped because it is broken.”

Figure 3. Universal Design for Inclusion.
Dolores stated: “[This] picture was the replacement of the first on the Library door which is much more inclusive to all by incorporating universal design.”

Figure 4. Alone in a Crowd.
Carlos stated: “Even with people all around…sometimes…one feels that they are totally alone in a crowd, and that can be a very lonely feeling even when going to watch a football game with lots of spectators. Having a dog as a service animal sometimes cuts one off from the rest of the participants because sometimes the dog is not a welcome addition to the mix of spectators and causes the owner to become the spectacle of a very trying situation at the least.”
participant feedback. On the one hand, photography has the ability to lend itself more readily to phenomena that are observable than to the intangible which could present a limitation to the types of barriers included in the scope of the project. Interestingly, one participant, Carlos, found a way to creatively represent the sense of isolation with a photograph in a football game (Figure 4). Relating to the photograph, Carlos wrote a narrative as follows: “...having a dog as a service animal sometimes cuts one off from the rest of the participants because sometimes the dog is not a welcome addition to the mix of spectators.” Although each photograph and narrative produced in our project was as unique and creative as our participants’ experiences, in future projects using Photovoice method, it may help participants to exercise their utmost creativity to capture the most salient barriers to inclusion that they experience, whether observable or not, if there is an opportunity for in-depth exposure to the variety of photographs and narratives that have been generated with this method. Photovoice production of intangible barriers will very likely draw our attention to different types of obstacles, such as the feeling of isolation, as this has been reported as the most influential barrier to students with disabilities relates to campus climate (Stodden & Jones, 2002).

In the future, Photovoice projects can include a greater number of students with more diverse backgrounds in terms of disability type, ethnicity, and field of study. This should enable a more thorough scrutiny of a university’s environment and inclusion of a wider range of barriers to an inclusive campus; compile findings to show consistency in experiences of students with disabilities for a greater power in effectuating change; adopt a quantitative measure of empowerment to further document its effectiveness; and include partners on campus that the Photovoice teams work with to implement changes as well as with broader campus constituents who experience the images and narratives as a means to expand the teams’ efforts.

Another direction for future Photovoice projects is further training in advocacy skills. In the present implementation, while participants delivered a presentation of their productions at the campus event, the photographs evidencing the barriers were then brought to the university administration with the assistance of the disability service office. Future Photovoice projects can be planned in a large scheme of capacity building, with additional advocacy skills training provided in the process following the production of photographs and narratives. A potent approach that applies photographs and narratives in combination with a team setting generates more potential than individual application of a single medium or technology. Photovoice can be employed by disability service providers to encourage students to be their own advocates to tell their stories about campus accessibility. Students’ perspectives can inform university policy to address barriers to an inclusive higher education.

References


References


About the Authors

Neelam Agarwal received her B.A. degree in Applied Psychology and M.A. in Social Work from University of Delhi, New Delhi, India. She received her Master’s degree in Rehabilitation counseling from University of Arizona. Her doctorate is in Educational Leadership and administration from the University of Texas at El Paso. She is a Certified Rehabilitation Counselor. Her experience includes working as a Vocational rehabilitation counselor in Philadelphia office of vocational rehabilitation. She has also worked as a program coordinator for at-risk children and adults at Center for Social Policy and Community Development, Temple University. She is currently working as an assistant director in the Center for Accommodations and Support Services at the University of Texas at El Paso. Her research interests include psychosocial and vocational implications of disability, lupus and vocational rehabilitation, social inclusion of students with disability in postsecondary education, photovoice as a participatory action research tool with students with disabilities and cultural diversity.

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Authors' Note

The authors would like to thank the participating students for their invaluable contributions to the project.

**BOOK REVIEW**

Adam Crawford
The Ohio State University

"Allies for Inclusion: Disability and Equity in Higher Education," a recent edition of the Association for the Study of Higher Education (ASHE's) Higher Education Report, provides an outstanding overview of the past, present, and potential future of disability in higher education. Each ASHE monograph synthesizes the literature on a higher education hot topic in order to provide both scholars and practitioners with the information and tools needed to improve educational practice and policies (Association on the Study of Higher Education, n.d.). The extensive literature review, rich analysis, and concrete strategies make this publication a quality tool for any disability services professional. Further, all campus community members can find insight into how to reframe their perspectives and make their work more inclusive through reading this report. Myers, Lindburg, and Nied break up the report into seven sections, taking the reader on a journey through the history, current practices, significant concerns, and new directions for disability issues in higher education.

Myers et al. open Section One with a question: “Where were you when you first experienced disability?” (p. 1). By framing the state of disability in higher education as a reflection of our own histories with and personal views on disability, the authors situate change at the intersection between perspective and practice. In order to better our practices, we must first trace these practices back to their historical and philosophical roots. Things such as language, policies, and where responsibility is placed are reflections of our institutions’ disability culture. Section Two offers a historical overview of the disability rights movement and its junctures with higher education. The authors take us back to the 1800s with the founding of Gallaudet University and then proceed through the passage of the Civil Rights Act, Title IX, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. The authors follow with a review of the major court cases that have shaped higher education disability law today, from *Southeastern Community College v. Davis* (1979) to *University of Alabama v. Garrett* (2001).

Section Three provides an overview of disability in higher education today, including typical disability services provided, disability identity development, and student outcome research. This section highlights some harsh realities, such as the graduation rate of disabled students being half that of nondisabled students (26% vs. 52%). While academic achievement is a concern, the literature showed co-curricular/social inclusion as a significant and interrelated need. In Section Four, Myers et al. delve into the different models of disability (i.e. medical model, social construction model, etc.) and relevant student development theories. The authors use these frameworks to pinpoint how oppressive attitudes toward individuals with disabilities contribute to the negative outcomes identified in the previous section. As highlighted in the text, research on disability in higher education is sorely lacking. Scholars, researchers, and professionals should answer the authors’ call to address this research gap.

Section Five outlines the meaning of being an ally, theories of ally development, and how promoting disability allies on campus can contribute to a positive campus culture. The concept of being a “disability ally” is not regularly discussed on many campuses, but this section refreshingly offers a robust resource for developing disability ally programs. In Section Six, the authors offer guidance on language and etiquette to create a more inclusive campus culture. The authors emphasize a thru-line of affirmation in this section. Words and actions should be chosen in a way that affirms and respects an individual’s autonomy, agency, and experiences. I was happy to see that the authors do offer both positive and negative perspectives on “person-first language,” which can all-too-often be described as best practice despite controversy amongst disability advocates. The takeaway, true of any marginalized group, is that acceptable language will vary from person to person and one should defer to an individual’s preferences. This section also offers a detailed overview of universal design, both its origins and its later manifestations in higher education: Universal Instructional Design and Universal Design for Student Development.

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Myers et al. close their report with a call to action. Entitled *The New Movement in Disability Education and Advocacy*, Section Seven calls on not just disability services professionals, but the entire higher education community to adopt a new vision for disability. The authors situate improving our campuses’ accessibility and inclusion as an institutional issue that should be addressed institution-wide. This paradigm shift consists of embracing disability studies, including disability topics in the curriculum, supporting inclusion initiatives, promoting respectful language and etiquette, and implementing universal design principles both inside and outside of the classroom. The authors provide many strategies for making this shift happen, and point to promising new programs such as *Allies for Inclusion: The Ability Exhibit Project*, as examples. This approach aligns with a professional resource recently endorsed by AHEAD, *Refocus: Viewing the Work of Disability Providers Through a New Lens* (Funkes, Kroeger, Loewen, & Thornton, n.d.). Created by Project ShIFT and its partners, Refocus is an online resource designed to provide disability services professionals with tools needed to shift their campus culture to one that challenges misconceptions, promotes universal design, and fosters inclusion. This monograph furthers the efforts of Project ShIFT and AHEAD, encouraging all of us to think critically and act justly in the work that we do.

### About the Author

Adam Crawford received his B.S. degree in sociology and M.S. degree in student affairs in higher education from Missouri State University. His experience includes working as a graduate assistant at Missouri State’s Disability Resource Center. He is currently a counselor in the Office of Student Life Disability Services at The Ohio State University. His research interests include diversity/inclusion in higher education, student veteran success, and universal design. He can be reached by email at: Crawford.843@osu.edu

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- **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).

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