

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

Allison R. Fleming¹
Anthony J. Plotner²
Kathleen Marie Oertle³

Abstract

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

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

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

tance for securing employment with sustainable earnings (Nye-Lengerman & Nord, 2016).

Over the past forty years, we have seen a shift in education distribution among household income levels; and while the middle class itself is declining, a bachelor’s degree still appears to be key to maintaining upward social mobility (Carnevale et al., 2010). A bachelor’s degree is associated with lower unemployment rates and higher weekly wages (U.S. Bureau of Labor and Statistics [BLS], 2014). In a longitudinal study of young adults 18-25 by the Bureau of Labor and Statistics, those with higher levels of education were able to hold more jobs, worked more weeks, and were less likely to be out of the labor force (BLS, 2013). These figures underscore the importance of a college degree for maintaining employment and financial self-sufficiency. As a result, colleges and universities are seeing growth in their population of students reporting disabilities (Timmerman & Mulvihill, 2015). Despite this growth, students with disabilities as a group are not enjoying the same success as their peers without disabilities. Academic success,

¹ Penn State University; ² University of South Carolina; ³ Utah State University

often measured by grades and degree completion, is an outcome with real life implications. Students who attend college, but fail to earn a degree are subject to immediate and long-term financial consequences. Short-term consequences such as tuition loss, and possible loan repayment, become difficult for many with low earnings. Long-term consequences are the reduced job stability and lower lifetime earning potential for those without a bachelor's degree (Baum & Payea, 2005).

College Students with Disabilities and Academic Success

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

The college experience itself has been shown to be different for some students with disabilities than their peers who do not have disabilities. For instance, students with disabilities have been found to demonstrate higher levels of emotional or psychological distress, and in some studies reported lower quality of life than their peers (Smedema et al., 2015). Students have reported feeling different than their peers, having trouble accessing accommodations, and in some cases facing bias or stigma from instructors, advisors, and peers (Baker, Boland, & Nowik, 2012; Dowrick,

Anderson, Heyer, & Acosta, 2005; Yssel, Pak, & Beilke, 2016). Several explanations may support the common finding that students with disabilities are at risk for poor performance in the postsecondary environment, including those related to the student (e.g., poor preparation, lacking self-advocacy skills, poor adjustment), and related to the environment (e.g., inclusiveness, attitudes of teachers and peers).

Possible Influences on Academic Performance

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

While useful to recognize who may be at increased risk for academic difficulty, research that stops at identifying only non-modifiable factors does not allow for intervention or policy changes (Fitchen et al., 2014). Additional student factors reflected in behavior and academic characteristics have been found to change student success. Specifically, academic engagement, often described as student efforts to participate and interact with faculty members and peers in social and educational activities as part of university programming, have been strongly linked to student success (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006; Strayhorn, 2012). However, climate plays a role in student perception of belonging and efforts to participate in campus activities (Shepler & Woosley, 2012), particularly the assessment of how others perceive students with disabilities (Dowrick et al., 2006; Hong, 2015; Lombardi, Gerdes, & Murray, 2011). Students with disabilities have been found to express higher levels of loneliness and social isolation than their peers (Herts, Wallis, & Maslow, 2014). Some have suggested additional support for students with disabilities to develop peer networks to ease the transition to the college environment (Herts et al., 2014).

Students' understanding of their disability, how it impacts their academic performance (self-awareness), and knowledge of how to request accommodations (self-advocacy) have been linked to multiple outcomes in higher education, including performance, persistence, and satisfaction (Belch, 2004; Daly-Cano, Vacarro, & Newman, 2015; Lombardi et al., 2011; Terras, Leggio, & Phillips, 2015; Yssel et al., 2016). Getzel and Thoma (2008) reported critical themes and activities related to self-advocacy relevant to college students with disabilities, including: seeking disability support services, forming relationships with faculty and instructors, developing an on-campus support system, and gaining awareness and self-understanding of their own needs. Self-advocacy is recognized as crucial to getting one's own needs met (Getzel & Thoma, 2008). For many, the college environment is the first time that the student is responsible for these tasks with or without assistance (White, Summers, Zhang, & Renault, 2014).

Student Characteristics, Academic Environment, and Performance

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

Academic performance was selected as the outcome of interest in the current study for two reasons: (a) the continued disparity between students with disabilities and their peers without disabilities in degree completion, and (b) consequences of not completing a college degree can be felt in earnings over a student's lifetime. The purpose of this study was to examine the impact of modifiable factors (i.e., peer support, disability services, faculty teaching, campus climate, and self-advocacy) and their relationship with academic

performance for college students with disabilities. We also included non-modifiable factors (e.g., demographics) as control variables to explore the relative contribution of each type of predictor. The following research question was addressed: What is the relationship between demographics, social-environmental factors, and academic performance?

Method

Sample and Participant Selection

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

Measures

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

tency for the scales was calculated as the following: peer support ($\alpha = .80$, 4 items); disability services ($\alpha = .83$, 4 items); self-advocacy ($\alpha = .80$, 6 items); and faculty teaching ($\alpha = .87$, 4 items).

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

Procedures

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

Data Analysis

Data were downloaded from the secure Qualtrics server into SPSS version 22. Data were checked for accuracy and corrected where applicable (e.g., if participants were asked to enter an age in years but entered a birth year instead). Approximately 23% of the sample had at least one missing data point. Data were examined for patterns, and median imputations were used where missing data was random. A total of 23 participants had random missing data, and 27 data points were imputed using this method. Median imputation was selected because of the relatively small number of data points missing; this method is more conservative than mean imputation which has a

higher risk of being influenced by sample variation. Median imputation tends to underestimate rather than overestimate variance (McKnight, McKnight, Sidani, & Figueredo, 2007). Variables were correlated in the expected directions, with no evidence of multicollinearity. Variables were entered into a two-step hierarchical regression to address the research question.

Results

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

Discussion

The purpose of this study was to examine the impact of modifiable factors (i.e., peer support, disability services, faculty teaching, campus climate, and self-advocacy) as potential predictors of higher academic performance for college students with disabilities. Studies of students with disabilities have suggested that there is an interaction between students, their perceptions, academic experiences, behaviors, and performance (e.g., Brady-Amoon & Fuertes, 2011; DeCesarei, 2015; Hong, 2015; Newman & Madaus, 2015). The findings of the current study indicated that

personal factors, i.e., age and self-advocacy were the only significant predictors of GPA among factors included. The average age of our participants was 27, which is older than the typical college students at four-year institutions. The expanded age range of our participants likely contributed to the finding that age and grades were related. Non-traditional students have different motivations and approach to learning which may influence their academic performance (Kenner & Weinermann, 2011) However, age is non-modifiable, so we will focus our discussion on the other significant finding related to self-advocacy. The strong role of self-advocacy in student performance is consistent with other results, and provides us with clear implications for supporting students with disabilities in post-secondary pursuits.

Limitations

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

Beyond Disability-Related Factors

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

Self-Advocacy within the Higher Education Context

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

community. College students can learn these essential skills through brief interventions such as training (Palmer & Roessler, 2000; Summers, White, Zhang, & Gordon, 2014; White et al., 2014).

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

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

Recommendations

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

Pre-Transition Preparation

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

Interesting narratives from students who have developed self-advocacy skills prior to entering higher education pointed to early experiences with family members, educators, and counselors who encouraged, modeled, and required these young people to exercise these skills before they went to college (Daly-Cano et al., 2015; McCall, 2014). Respondents recalled these early experiences positively, and were appreciative of understanding that once the student graduated that they would have all of the responsibility in managing accommodations and getting their own needs met (McCall, 2014), even if some thought that teachers or counselors were "being meanies" and "making them do it all themselves" (Daly-Cano et al., 2015, p. 219).

Students learned to speak up for themselves, and to explain their needs to others with support so that they would know what to do once the support had faded. Even those students who had practice and felt prepared to self-advocate when beginning college sometimes needed to adjust their approach and/or increase advocacy due to changed or unexpected circumstances (Daly-Cano et al., 2015). It is clear that training in self-advocacy and self-determination, and opportunities to practice these skills are critical to being able to effectively do so independently (Palmer & Roessler, 2000).

College and University Based Strategies

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

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

Modifications to the Campus Environment

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

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

Conclusions

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

References

- Association on Higher Education and Disability. (2012, April). *Supporting accommodation requests: Guidance on documentation practices*.
- Banks, J. (2014). Barriers and supports to postsecondary transition: Case studies of African American students with disabilities. *Remedial and Special Education, 35*(1), 28–39.
- Baker, K. Q., Boland, K., Nowik, C. M. (2012). A campus survey of faculty and student perceptions of persons with disabilities. *Journal of Postsecondary Education and Disability, 25*, 309-329.
- Baum, S., & Payea, K. (2005). *Education pays: The benefits of higher education for individuals and society*. New York: The College Board.
- Belch, H. (2004). Retention and students with disabilities. *Journal of College Student Retention, 6*, 3-22.
- Brady-Amoon, P., & Fuertes, J. N. (2011). Self-efficacy, self-rated abilities, adjustment, and performance. *Journal of Counseling and Development, 89*, 431-438.
- Butler, A. L. (2012). Secondary transition experiences: Analyzing perceptions, academic self-efficacy, academic adjustment and GPA for college students with learning disabilities pursuing postsecondary education [Doctoral dissertation]. Retrieved from http://drum.lib.umd.edu/bitstream/1903/11637/1/Butler_umd_0117E_12011.pdf
- Carnevale, A. P., Smith, N., & Strohl, J. (2010). Projections of jobs and education requirements through 2018. Georgetown University: Washington, DC. Georgetown University Center on Education and the Workforce.
- Cory, R. C. (2011). Disability services offices for students with disabilities: A campus resource. *New Directions for Higher Education, 154*, 27–36. doi:10.1002/he.431
- Daly-Cano, M., Vaccaro, A., & Newman, B. (2015). College student narratives about learning and using self-advocacy skills. *Journal of Postsecondary Education and Disability, 28*, 213-227.
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed). Hoboken, NJ: Wiley and Sons.
- De Cesarei, A. (2015). Psychological factors that foster or deter the disclosure of disability by university students. *Psychological Reports, 116*, 665–673.
- Dowrick, P. W., Anderson, J., Heyer, K., & Acosta, J. (2005). Postsecondary education across the USA: Experiences of adults with disabilities. *Journal of Vocational Rehabilitation, 22*, 41-47.
- Durlak, C. M., Rose, E., & Bursuck, W. D. (1994). Preparing high school students with learning disabilities for the transition to postsecondary education: teaching the skills of self-determination. *Journal of Learning Disabilities, 27*(1), 51-59.
- Erickson, A. S., Noonam, P. M., Zheng, C., & Brusow, J. A. (2015). The relationship between self-determination and academic achievement for adolescents with intellectual disabilities. *Research in Developmental Disabilities, 36*, 45-54.
- Fiedler, C. R., & Danneker, J. E. (2007). Self-advocacy instruction: Bridging the research-to-practice gap. *Focus on Exceptional Children, 39*(8), 1–20.
- Field, S., Sarver, M. D., & Shaw, S. F. (2003). Self-determination: A key to success in postsecondary education for students with learning disabilities. *Remedial and Special Education, 24*, 339-349.

- Fitchen, C. S., Nguyen, M. N., Budd, J., Asuncion, J., Tibbs, A., Jorgenson, M., Barile, M., & Amsel, R. (2014). College and university students with disabilities: Modifiable personal and school related factors pertinent to grades and graduation. *Journal of Postsecondary Education and Disability, 27*, 273-290.
- Fleming, A. R., & Fairweather, J. S. (2012). The role of post-secondary education in the path from high school to work for youth with disabilities. *Rehabilitation Counseling Bulletin, 55*(2), 71-81.
- Fleming, A. R., Oertle, K. M., Plotner, A. J., & Hakun, J. G. (2017). Influence of social factors on student satisfaction among college students with disabilities. *Journal of College Student Development, 58*(2), 215-228.
- Garrison-Wade, D. F. (2012). Listening to their voices: Factors that inhibit or enhance postsecondary outcomes for students with disabilities. *International Journal of Special Education, 27*, 113-125.
- Garrison-Wade, D. F., & Lehmann, J. P. (2009). A conceptual framework for understanding students' with disabilities transition to community college. *Community College Journal of Research and Practice, 33*, 415-443.
- Getzel, E. E. (2008). Addressing the persistence and retention of students with disabilities in higher education: Incorporating key strategies and supports on campus. *Exceptionality: A Special Education Journal, 16*, 207-219.
- Getzel, E. E., & Thoma, C. A. (2008). Experiences of college students with disabilities and the importance of self-determination in higher education settings. *Career Development for Exceptional Individuals, 31*(2), 77-84.
- Gonyea, R. M. (2005). Self-reported data in institutional research: Review and recommendations. *New Directions for Institutional Research, 127*, 73-89.
- Gysbers, N. C. (2005). Comprehensive school guidance programs in the United States: A career profile. *International Journal for Educational and Vocational Guidance, 5*, 203-215.
- Gysbers, N. C. (2008). Individual student planning in the United States: Rationale, practices, and results. *Asian Journal of Counseling, 2*, 117-139.
- Herts, K. L., Wallis, E., & Maslow, G. (2014). College freshman with chronic illness: A comparison with healthy first year students. *Journal of College Student Development, 55*, 475-480.
- Hong, B. S. S. (2015). Qualitative analysis of barriers college students with disabilities experience in higher education. *Journal of College Student Development, 56*, 209-226.
- Horn, L., & Berkold, J. (1999). *Students with disabilities in postsecondary education: A profile of preparation, participation, and outcomes*. Washington, DC: U.S. Department of Education. National Center for Educational Statistics.
- Individuals with Disabilities Education Improvement Act, 20 U.S.C. § 1400 (2004)
- Izzo, M. V., & Lamb, P. (2003). Developing self-determination through career development activities: Implications for vocational rehabilitation counselors. *Journal of Vocational Rehabilitation, 19*, 71-78.
- Jorgensen, S., Fitchen, C. S., Havel, A., Lamb, D., James, C., & Barile, M. (2005). Academic performance of college students with and without disabilities: An archival study. *Canadian Journal of Counselling, 39*, 101-117.
- Kenner, C., & Weinermann, J. (2011). Adult learning theory; Applications to non-traditional college students. *Journal of College Reading and Learning, 41*(2), 87-97.
- Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. (2006). *What matters to student success: A review of the literature*. Washington, DC: National Postsecondary Educational Cooperative.
- Kuncel, N. R., Credé, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research, 75*, 63-82.
- Lombardi, A., Gerdes, H., & Murray, C. (2011). Validating an assessment of individual actions, postsecondary supports, and social supports of college students with disabilities. *Journal of Student Affairs Research and Practice, 48*, 107-126. doi:10.2202/1949-6605.6214
- Lombardi, A., Murray, C., & Kowitt, J. (2016). Social support and academic success for college students with disabilities: Do relationship types matter? *Journal of Vocational Rehabilitation, 44*(1), 1-13.
- Mamiseishvili, K., & Koch, L. C. (2011). First-to-second-year persistence of students with disabilities in postsecondary institutions in the United States. *Rehabilitation Counseling Bulletin, 54*, 93-105.

- Mann, D. R., & Wittenburg, D. C. (2015). Starting behind wage and employment differentials between young adults with and without disabilities. *Journal of Disability Policy Studies, 26*, 89–99.
- Marshak, L., Van Wieren, T., Ferrell, D. R., Swiss, L., Dugan, C. (2010). Exploring barriers to college student use of disability services and accommodations. *Journal of Postsecondary Education and Disability, 2*, 151–165.
- McCall, Z. A. (2014). The transition experiences, activities, and supports of four college students with disabilities. *Career Development and Transition for Exceptional Individuals, Early Online*. doi:10.1177/2165143414537679
- McKnight, P. E., McKnight, K. M., Sidani, S., & Figueredo, A. J. (2007). *Missing data: A gentle introduction*. New York: Guilford Press.
- National Center for Educational Statistics. (2015). *Fast facts: Post-secondary students with disabilities*. Author, Washington: DC.
- Newman, L. A., & Madaus, J. W. (2015). An analysis of factors related to receipt of accommodations and services by postsecondary students with disabilities. *Remedial and Special Education, 36*, 208–219.
- Newman, L., Wagner, M., Knokey, A.-M., Marder, C., Nagle, K., Shaver, D., Wei, X., with Cameo, R., Contreras, E., Ferguson, K., Greene, S., & Schwarting, M. (2011). *The Post-High School Outcomes of Young Adults with Disabilities up to 8 Years After High School. A Report From the National Longitudinal Transition Study-2 (NLTS2) (NCSE 2011-3005)*. Menlo Park, CA: SRI International.
- Nye-Lengerman, K., & Nord, D. (2016). Changing the message: Employment as a means out of poverty. *Journal of Vocational Rehabilitation, 44*, 243–247.
- Oertle, K. M., & Bragg, D. D. (2014). Transitioning students with disabilities: Community college policies and practices. *Journal of Disability Policy Studies, 25*(1), 59–67.
- O'Neill, L. N., Markward, M. J., & French, J. P. (2012). Predictors of graduation among college students with disabilities. *Journal of Postsecondary Education and Disability, 25*, 21–36.
- Palmer, C., & Roessler, R. T. (2000). Requesting classroom accommodations: Self-advocacy and conflict resolution training for college students with disabilities. *The Journal of Rehabilitation, 66*(3), 38–43.
- Reinschmiedt, G. H., Sprong, M. E., Dallas, B., Buono, F. D., & Upton, T. D. (2013). Post-secondary students with disabilities receiving accommodations: A survey of satisfaction & subjective well-being. *Journal of Rehabilitation, 79*(3), 3–10.
- Shepler, D. K., & Woosley, S. A. (2012). Understanding the early integration experiences of college students with disabilities. *Journal of Postsecondary Education and Disability, 25*, 37–50.
- Smedema, S. M., Chan, F., Yaghmaian, R. A., DaSilva Cardosos, E., Muller, V., Keenan, J., Dutta, A., & Ebener, D. J. (2015). The relationship of core self-evaluations and life satisfaction in college students with disabilities: Evaluation of a mediator model. *Journal of Postsecondary Education and Disability, 28*, 341–358.
- Sniatecki, J. L., Perry, H. B., & Snell, L. H. (2015). Faculty attitudes and knowledge regarding college students with disabilities. *Journal of Postsecondary Education and Disability, 28*, 259–275.
- Solberg, V. S., Phelps, L. A., Haakenson, K. A., Durham, J. F., & Timmons, J. (2012). The nature and use of individualized learning plans as a promising career intervention strategy. *Journal of Career Development, 39*(6), 500–514.
- Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational success for all students*. New York: Routledge.
- Summers, J. A., White, G. W., Zhang, E., & Gordon, J. M. (2014). Providing support to postsecondary students with disabilities to request accommodations: A framework for intervention. *Journal of Postsecondary Education and Disability, 27*, 245–260.
- Terras, K., Leggio, J., & Phillips, A. (2015). Disability accommodations in online courses: The graduate student experience. *Journal of Postsecondary Education and Disability, 28*, 329–340
- Timmerman, L. C., & Mulvihill, T. M. (2015). Accommodations in the college setting: The perspectives of students living with disabilities. *The Qualitative Report, 20*(10), 1609–1625.
- United States Department of Labor, Bureau of Labor Statistics. (2013). *America's youth at 25: School enrollment, number of jobs held, and labor market activity: Results from a longitudinal study*. Washington, DC: U.S. Department of Labor.
- United States Department of Labor, Bureau of Labor Statistics. (2014). *Employment projections*. Washington, DC: U.S. Department of Labor.

- West, M., Kregel, J., Getzel, E. E., Zhu, M., Ipsen, S. M., & Martin, E. D. (1993). Beyond section 504: Satisfaction and empowerment of students with disabilities in higher education. *Exceptional Children, 59*, 456-467.
- White, G. W., Summers, J. A., Zhang, E., & Renault, V. (2014). Evaluating the effects of a self-advocacy training program for undergraduates with disabilities. *Journal of Postsecondary Education and Disability, 27*, 229-244.
- Wolanin, T. R., & Steele, P. E. (2004). *Higher education opportunities for students with disabilities: A primer for policymakers*. Washington, DC: Institute for Higher Education Policy.
- Yssel, N., Pak, N., & Beilke, J. (2016). A door must be opened: Perceptions of students with disabilities in higher education. *International Journal of Disability, Development, and Education, 63*, 384-394.

About the Authors

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

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

Kathleen Marie Oertle received her B.S. degree in animal science, her M.S. degree in rehabilitation counseling, and Ph.D. in special education from the University of Illinois at Urbana-Champaign. Her experience includes working as a program coordinator, counselor, and teacher serving students with disabilities. She is currently an assistant professor in the Department of Special Education and Rehabilitation at Utah State University. Her research interests include collaboration, inclusion, and secondary transition. She can be reached by email at: kathleen.oertle@usu.edu.

Table 1

Sample Demographics

Variable	N	%
Gender Identity		
Woman	218	67.1
Man	107	32.9
Racial or Ethnic Identity		
African American or Black	12	3.7
American Indian or Alaska Native	3	0.9
Asian American or Asian	5	1.5
Hispanic or Latino	7	2.1
Native Hawaiian or Pacific Islander	2	0.6
Multi-Racial	5	1.5
White	287	79.3
Self-Identify	3	0.9
Academic Status		
Freshman or First Year	36	11.1
Sophomore	54	20.0
Junior	83	25.5
Senior	89	27.4
Graduate/Professional	35	10.8
Other	17	5.2
First Generation Student¹		
No	279	77.1
Yes	45	12.4
Type of Disability		
ADHD or Learning Disorder	114	31.5
Deaf or Hearing Impairment	14	3.9
Mobility Impairment	12	3.3
Intellectual or Cognitive Impairment	5	1.4
Brain Injury	25	6.9
Chronic Health	44	12.2
Psychological or Mental Health	80	22.1
Visual Impairment	7	1.9
Autism Spectrum	13	3.6
Other	11	3.0
Satisfaction with College Choice		
Yes, I would make the same choice over again	219	60.5
No, I would make a different choice	104	28.7

(Table 1, continued)

Variable	<i>M</i>	<i>SD</i>
Age	27.62	10.580
Disability Duration	13.43	11.51
Grade Point Average	3.26	0.49

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

Table 2

*Hierarchical Regression Model***Step 1: Non-modifiable variables**

R = .23 Adjusted R² = .034 Std. Error of the Estimate = .47

Predictor	B(SE)	β	95%CI	<i>p</i> -value
Constant	2.956		[2.693, 3.218]	.000
Age	.009 (.004)	.184	[-.001, .016]	.020
Gender	.106 (.063)	.105	[-.018, .231]	.094
Race ¹	-.176 (.090)	-1.22	[-.354, .002]	.053
Disability Duration	-.005 (.003)	-1.26	[-.012, .001]	.103
First Generation	-.145 (.086)	-0.34	[-.215, .125]	.602

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

R = .45 Adjusted R² = .173 Std. Error of the Estimate = .44

Predictor	B(SE)	β	95%CI	<i>p</i> -value
Constant	3.011(.159)		[2.699, 3.324]	<.001
Age	.008(.003)	.170	[-.001, .015]	.021
Gender	.071(.060)	.071	[-.046, .189]	.234
Race ¹	-.134(.085)	-.093	[-.301, .034]	.117
Disability Duration	-.006(.003)	-.142	[-.012, .000]	.050
First Generation	-.065(.081)	-.049	[-.224, .094]	.421
Satisfaction	.022(.066)	.022	[-.107, .151]	.737
Faculty Teaching	.047(.030)	.098	[-.102, .105]	.118
Disability Services	-.017(.030)	-.036	[-.076, .041]	.558
Self-Advocacy	.170(.030)	.355	[-.110, .229]	<.001
Peer Support	.027(.030)	.057	[-.031, .086]	.357

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

¹ Race variable collapsed to binary (0 = White, 1 = Minority).