

3-2017

Influence of Social Factors on Student Satisfaction Among College Students With Disabilities

Kathleen Marie Oertle
Utah State University

Allison R. Fleming
The Pennsylvania State University

Anthony J. Plotner
University of South Carolina

Jonathan G. Hakun
The Pennsylvania State University

Follow this and additional works at: https://digitalcommons.usu.edu/sped_facpub

 Part of the [School Psychology Commons](#)

Recommended Citation

Fleming, A.R., Oertle, K.M., Plotner, A.J., Hakun, J.G. Influence of social factors on student satisfaction among college students with disabilities (2017) *Journal of College Student Development*, 58 (2), pp. 215-228.

This Article is brought to you for free and open access by the Special Education and Rehabilitation at DigitalCommons@USU. It has been accepted for inclusion in Special Education and Rehabilitation Faculty Publications by an authorized administrator of DigitalCommons@USU. For more information, please contact dylan.burns@usu.edu.





PROJECT MUSE®

Influence of Social Factors on Student Satisfaction Among College Students With Disabilities

Allison R. Fleming, Kathleen Marie Oertle, Anthony J. Plotner, Jonathan G. Hakun



Journal of College Student Development, Volume 58, Number 2, March 2017, pp. 215-228 (Article)

Published by Johns Hopkins University Press

DOI: <https://doi.org/10.1353/csd.2017.0016>

➔ *For additional information about this article*

<https://muse.jhu.edu/article/650715>

Influence of Social Factors on Student Satisfaction Among College Students With Disabilities

Allison R. Fleming Kathleen Marie Oertle Anthony J. Plotner Jonathan G. Hakun

A significant body of research on student retention reflects that social and environmental factors influence continued enrollment in postsecondary education and academic success. Yet, for students with disabilities, more emphasis is placed on accommodations, access, and support services without sufficient attention to the social aspect of the student experience. In this study, we investigated belonging as a primary contributor to student satisfaction and examined the degree to which other social factors modified this relationship among a sample of students with disabilities attending public, 4-year universities. A higher sense of belonging was associated with greater student satisfaction in our sample. Through multiple mediation modeling, we found that self-advocacy and perception of the campus climate toward students with disabilities independently modified the relationship between belonging and student satisfaction. These results have important implications for understanding the influence of belonging and student satisfaction, and supporting and retaining students with disabilities.

Higher education has been called “the key to unlocking the middle class—or better” (Carnevale, Smith, & Strohl, 2010, p. 3) and “crucial to the pursuit of high-quality vocational opportunities (Reinschmiedt, Spring, Dallas, Buono, & Upton, 2013, p. 3). These words continue to ring true for many young Americans, including those who have disabilities. A college education, perhaps now more than ever, is critical for work

opportunities, including higher wages, the ability to work more hours, and maintaining upward social mobility (Bureau of Labor Statistics [BLS], 2013, 2014; Carnevale et al., 2010). Despite the fact that an increasingly large number of high school graduates are pursuing a postsecondary education, over 40% fail to complete college, the majority leaving within their first year (Goenner, Harris, & Pauls, 2013; Mattanah et al., 2010).

National postsecondary educational statistics show some areas of clear disadvantage for students with disabilities (Wolanin & Steele, 2004). Results of comparisons indicate that, even when factors that are typically known to influence student persistence were controlled for, students with disabilities still had lower retention and completion rates than did their peers without disabilities (Horn & Berktold, 1999). For students with disabilities, methods for increasing retention and success have been focused on providing access, including physical accessibility of the campus and classroom accommodations (Wolanin & Steele, 2004). However, this does not address some of the social influences that are the focus of retention efforts for other students. For all students, including those with disabilities, lack of success may be due to the challenges associated with college life such as forming new relationships, increased independence, and greater academic demands. The purpose of this study was to explore the

Allison R. Fleming is Assistant Professor of Education at The Pennsylvania State University. Kathleen Marie Oertle is Assistant Professor of Special Education and Rehabilitation at Utah State University. Anthony J. Plotner is Associate Professor of Special Education at the University of South Carolina. Jonathan G. Hakun is a lecturer and research associate in Psychology at The Pennsylvania State University.

relationship between belonging and college satisfaction among a sample of students with disabilities, simultaneously considering the potential influence of self-advocacy and campus climate on this relationship. Student satisfaction with their college experience is recognized as crucial to persistence (Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013). Furthermore, understanding the influences of campus climate and self-advocacy may offer additional malleable variables for future manipulation to improve satisfaction for students with disabilities.

Social Aspects of Persistence

Models of student persistence and retention in the postsecondary education student literature (e.g., Tinto, Astin, Bean) often emphasize student involvement, or the interaction between the student and the educational institution, in explaining retention (Bean; Bean & Metzner, 1985; Cabrera, Castañeda, Nora, & Hengstler, 1992; Mamiseishvili & Koch 2011; Milem & Berger, 1997). A limitation noted in these traditional models of student persistence is that they seemed to be based on the experiences of a particular type of student, namely White students of middle or upper class backgrounds entering college directly following high school (Fischer, 2007). Observations that students of color, first-generation college students, and students who have limited financial means were not having the same types of experiences during their college transition has prompted reconsideration of these traditional models to identify additional areas for investigation that would benefit a more diverse student audience (Hurtado & Carter, 1997). Braxton, Hirschy, and McClendon (2011) revised Tinto's model to highlight students' perception of the environment as critical to integration. The extent to which students perceive the campus environment to be welcoming,

aloof, or hostile to students like themselves impacts their efforts to integrate. Even the concept of integration itself has come under question, as for students of racial and ethnic minority groups, "integrating" may imply that students have to reject their own cultural norms and beliefs in order to fit in better with their peers. Belonging, or membership, are preferred concepts to consider given that one can belong without having to adopt the group norms (Hurtado & Carter, 1997). Leading scholars in higher education research have argued that belonging is an "especially necessary, but challenging, endeavor for students from historically marginalized self-identity groups," as there are some students who are at greater risk for feeling unwelcomed, lonely, or left out (Vaccaro, Daly-Cano, & Newman, 2015, p. 670; cf. Strayhorn, 2012). However, belonging on a college campus does not occur in a vacuum. As is the case for other students, characteristics of both the campus environment and the individual student likely influence the social and overall experience for students with disabilities.

Belonging

Social belonging, or a sense of connection to or relationship with others, has been proposed as a human need (Baumeister & Leary, 1995). A lack of belonging predicts negative outcomes such as poor health, immune function, and intellectual performance; decreased sense of well-being; and increased rates of mortality (Cacioppo, Grippo, London, Goossens, & Cacioppo, 2015; Cacioppo & Patrick, 2008; Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Rotenberg, 1994; Walton & Cohen, 2011). Belonging is a key aspect of persistence that has not been emphasized relative to students with disabilities as a population, despite evidence that belonging and loneliness are powerful predictors of many important outcomes

including academic performance, health, and persistence (Baumeister & Leary, 1995; Cacioppo & Patrick, 2008; Qualter et al., 2015; Rotenberg, 1994; Walton & Cohen, 2011). The transition to college represents a life change involving social networks and social supports, with potential threats to feelings of belonging (Strayhorn, 2012). For college-age adults with disabilities, a sense of satisfaction with social relationships has been linked to quality of life (Fleming & Leahy, 2014). Reduced belonging has also been shown to correlate with dropping out of college (Rotenberg & Morrison, 1993). Strayhorn (2012) suggested that reduced belonging often leads to decreased engagement and academic performance and is also observed to be domain specific, meaning that student function and performance are greater in areas where belonging needs are met (e.g., a particular academic course or extracurricular activity).

Preliminary studies of students with disabilities and social experiences have shown mixed results. Adams and Proctor (2010) found that, compared with their nondisabled peers, students with disabilities are more likely to report not fitting in and thoughts of dropping out completely. Alternatively, Shepler and Woosley (2012) found no differences between students with and without disabilities in their reports related to social integration, institutional attachment, or homesickness. Understanding the dynamics of “fitting in” and the process of adjusting to college, as well as satisfaction with the experience, is critical to support colleges and universities in responding to the needs of students with disabilities.

Students With Disabilities and Campus Environment

Institutions may be unaware of cultural or environmental factors that make it difficult for members of underrepresented groups to feel welcome. Recognition of institutional

environments and students’ perceptions has been particularly critical in the study of students of color and persistence (Rendón, Jalamo, & Nora, 2000) but could also apply to students with disabilities as a growing subpopulation on college campuses. Individuals with disabilities are considered by some to be the largest minority group in the world (United Nations, 2006). The sociopolitical model of disability purports that the most significant limitations of people with disabilities are social and environmental, in the form of inaccessible environments, attitudinal barriers, and stigma associated with disability status (Smart, 2009).

Some suggestion of a welcoming environment for students with disabilities is related to physical features such as accessible classrooms, dorms, campus grounds, and public areas as well as an active and visible disability supports service office (Belch, 2004). Social dynamics are less clearly observable than is structural accessibility on campus and may include experiences students have with peers, faculty, and staff. Social and environmental barriers, such as negative attitudes of instructors and peers, are still a problem on many college campuses (Burgstahler & Doe, 2006; Dowrick, Anderson, Heyer, & Acosta, 2005; Hall & Belch, 2000; McCall, 2015). Even on campuses where physical accessibility is up to standards and disability services are well developed and available, it is unclear whether this has an impact on the underlying campus climate (Wilson, Getzel, & Brown, 2000).

Self-Advocacy

Self-advocacy is often considered to be among the most critical ingredients in adjustment to and success in college for students with disabilities (Adams & Proctor, 2010; Getzel & Thoma, 2008; Murray, Lombardi, & Kosty, 2014). Self-advocacy has been well studied within the disability literature and has been defined as a component of the civil rights

movement for people with disabilities, the ability to speak up for oneself, a component of self-determination, and an awareness of an individual's own strengths and weaknesses allowing for articulation of accommodations and supports (Test, Fowler, Wood, Brewer, & Eddy, 2005). Researchers and practitioners alike have observed that, among transition-age youth and young adults of college age, young adults who possess strong self-advocacy skills tend to have better outcomes across domains such as education, work, and community living (Getzel & Thoma, 2008; Test et al., 2005). 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, both in educational pursuits and in adult life (Fabian, 2007). Although self-advocacy is considered a skill that can be developed, it occurs within a social context and, therefore, is related to students' social and environmental perceptions.

Study Purpose

As Belch (2004) accurately summarized, "the research and literature have confirmed that the retention of college students is complex and encompasses not only such issues as academic preparation but also commitment, belonging, and perseverance" (p. 5). We propose that a relatively unexplored area related to student satisfaction and retention for students with disabilities lies in the social arena, specifically the extent to which students have their social needs met while enrolled. The purpose of this study was to consider the importance of belonging for students with disabilities in the pursuit of their college degrees, like it has been

shown to be for other students. Moreover, we explored whether environmental perceptions and self-advocacy have any influence on the relationship between belonging and student satisfaction with the college experience. The results of investigating these relationships could be used to impact the higher educational experiences of students with disabilities in an area that has been left largely unaddressed (i.e., social factors). This research is particularly meaningful given the focus on the whole person rather than the typical disability-related areas of accessibility, requesting accommodations, and attitudes toward disability.

METHODS

Sample and Participant Selection

Participants were 325 students receiving disability services from one of three large public universities. The survey link was sent through disability resource centers to 2,000 students in total, with 372 hits on the survey for a response rate of 18.6%. Of the completed surveys, 47 had significant missing data and were dropped from the sample, leaving 325 participants retained in the final sample.

Measures

The instrument included several sections: demographics, self-advocacy, campus climate, loneliness, and a question regarding student satisfaction with his or her college choice.

Demographics. Participants were asked to report gender, age, race/ethnicity, primary disability, age of onset of primary and secondary disability, marital status, and academic level (i.e., freshman, sophomore, junior, senior).

Belonging. Belonging was measured by using reverse scores of the short form (8-item version) of the UCLA Loneliness Scale (Hays & DiMatteo, 1987). The use of a loneliness scale to measure belonging is common practice in the social psychology research (e.g.,

Capiocco & Patrick, 2009; Mattanah et al., 2010). Participants were asked to indicate on a 4-point Likert-type scale, ranging from 1 (*never*) to 4 (*always*), how often they feel a particular way. Sample items include, “I lack companionship,” “I feel left out,” and “I feel isolated from others.” Reliability for the 8-item scale has been found to be high, and the intraclass correlation between this scale and the longer 20-item scale was calculated at .91. In addition, relationships between the 8-item scale and related constructs (e.g., alienation, social anxiety) were found to be in the expected directions (Hays & DiMatteo, 1987).

Self-Advocacy and Campus Climate. The College Students with Disabilities Campus Climate Survey (CSDCC; Lombardi, Gerdes, & Murray, 2011) 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 a total of 40 items. Respondents are asked to rate statements on a scale ranging from 1 (*never true*) to 6 (*always true*). We selected two of the nine scales—Self-Advocacy and Campus Climate—because of their relevance to our study. Sample items from the Self-Advocacy scale include, “I feel comfortable advocating for myself and my needs at this university” and “generally, I feel good about myself and my abilities at this university.” Sample items from the Campus Climate scale include, “I feel comfortable on this campus” and “I feel the overall campus environment is supportive of students with disabilities.” Convergent validity was found between scales of the CSDCC and constructs related to student performance (i.e., grade point average, course efficacy) and social inclusion (i.e., roommate efficacy, social self-efficacy; Lombardi et al., 2011).

Outcome Measure. Students were asked, “If I could do it over again, I would . . .” and were given several options to select, including

do the same thing, attend a different college or university, select a different program, or not attend college at all. This type of question has been used as an indicator of students’ satisfaction with their experience in college, which is related to other constructs such as persistence (Krumrei-Mancuso et al., 2013).

Data Preparation and Analysis

Data were downloaded from a secure server into SPSS version 22 (IBM, 2014). 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 were random. A total of 23 participants had random missing data, and 27 data points were imputed using this method. Expected correlations between variables were found, with no evidence of multicollinearity.

Data Reduction. Exploratory factor analysis was used with the items from the two selected scales (Campus Climate and Self-Advocacy) to generate a factor score for each participant on these scales. The items from the two scales were entered into an exploratory factor analysis with Oblimin rotation. One item from the original Self-Advocacy scale was dropped due to unacceptable cross-loadings. The rest of the items were retained on their original scales. Scale reliability was calculated within this sample as follows: Campus Climate (4 items), $\alpha = .878$ and Self-Advocacy (5 items), $\alpha = .797$. Scale reliability for the belonging score was computed as .893 for this sample.

Mediation Analysis. Simple and multiple mediation analyses were conducted through multiple linear regression analysis in SPSS, Version 22 (IBM, 2014) using macros that simultaneously estimate paths between variables and indirect effects in the case of medi-

ation analyses (INDIRECT; Hayes, 2013). Bootstrapping was used to estimate the direct and indirect effects of loneliness on student satisfaction, using the SPSS version of the Preacher and Hayes (2008) macro, downloaded from their website (<http://www.afhayes.com/spss-sas-and-mplus-macros-and-code.html>). The advantages associated with testing multiple mediator models, rather than several simple mediation models, are a reduced risk of bias due to omitted variables and the ability to evaluate the magnitude of the direct effects associated with the proposed mediators at once (Hayes, 2009; Preacher & Hayes, 2008). Estimates were based on 1,000 samples.

RESULTS

Descriptive Statistics and Correlations

Participants reported a moderate level of satisfaction with their college choice; 67.8% of participants ($n = 219$) indicated that if they could do it again, they would make the same choice. The remaining respondents indicated that they would have selected a different program ($n = 54$; 16.7%), a different college or university ($n = 43$; 13.3%), or not attended college at all ($n = 7$; 2.2%). Collapsed to a binary outcome (0 = different choice, 1 = same choice), the mean was .678 ($SD = .468$). Standardized scores, obtained through data reduction for both self-advocacy and campus climate, were generated for belonging.

Bivariate correlations were performed between demographic variables, belonging, social factors, and student satisfaction. The correlation matrix values, means, and standard deviations for the study variables are presented in Table 1. Of central relevance to the current study, a significant correlation was observed between belonging and student satisfaction, suggesting that students with higher belonging were more likely to indicate satisfaction with

their college choice ($r = .29$). In addition, significant relationships were observed between belonging and self-advocacy ($r = .41$), belonging and campus climate ($r = .27$), self-advocacy and student satisfaction ($r = .33$), and campus climate and student satisfaction ($r = .47$).

Multiple Mediation Analysis

A significant relationship between belonging and student satisfaction was observed in our sample, suggesting that higher levels of belonging were associated with high levels of student satisfaction with the college choice. Significant relationships were also observed between belonging and the social and personal factors as well as between each factor and student satisfaction. To examine whether these factors (self-advocacy and campus climate) shared enough variance with belonging and student satisfaction to act as modifiers of the relationship between belonging and student satisfaction, a multiple mediation model was tested.

Before accounting for the influence of the social factors, belonging and student satisfaction were positively associated (path estimate = 0.64, $p < .001$; Figure 1). As predicted, both self-advocacy, with an indirect effect (SA) of 0.22, 95% CI [0.03–0.44], and perception of the campus climate, with an indirect effect (CC) of 0.27, 95% CI [0.09–0.51], independently accounted for a significant portion of the relationship between belonging and student satisfaction with a total indirect effect (SA + CC) of 0.487, 95% CI [0.23–0.86]. After accounting for the influence of both social factors, the remaining direct effect of belonging on student satisfaction was no longer significant (path estimate = 0.25, $p = .23$). Results of this multiple mediation analysis indicated that belonging influences student satisfaction through two independent pathways: through an increased sense self-advocacy and an improved perception of campus climate toward students with dis-

TABLE 1.
Means, Standard Deviations, and Correlation Matrix of Model Variables

Variables	M (SD)	1	2	3	4	5	6	7	8	9	10
1. Gender male = 1, female = 2	1.67 (0.47)	—									
2. Age	27.62 (10.58)	-.010	—								
3. Race White = 0, minority = 1	0.12 (0.33)	-.002	.080	—							
4. Disability Type see Note	5.88 (1.98)	.082	-.151**	-.006	—						
5. Disability Duration	13.43 (11.51)	-.116*	.596**	.097	-.309**	—					
6. Marital Status single = 0, partnered = 1	0.27 (0.44)	-.210**	.377**	.061	-.138*	.253**	—				
7. Self-Advocacy different choice = 0, same choice = 1	0.00 (1.00)	.060	.089	-.080	-.060	.066	.003	—			
8. Campus Climate	0.00 (1.00)	-.050	-.002	-.103	-.027	-.053	.052	.173**	—		
9. Belonging	0.00 (1.00)	.036	.054	-.102	-.048	.095	.192**	.410**	-.269**	—	
10. Same/Different Outcome	-0.00 (1.00)	.121*	.044	-.212**	.006	-.005	-.045	.333**	-.472**	-.286**	—

Note. Disability Type: blind/visual = 1, deaf/hearing = 2, mobility = 3, brain injury = 4, LD/ADHD = 5, intellectual/cognitive = 6, mental health = 7, chronic health = 8, autism spectrum = 9, other = 10.

* $p < .05$. ** $p < .01$.

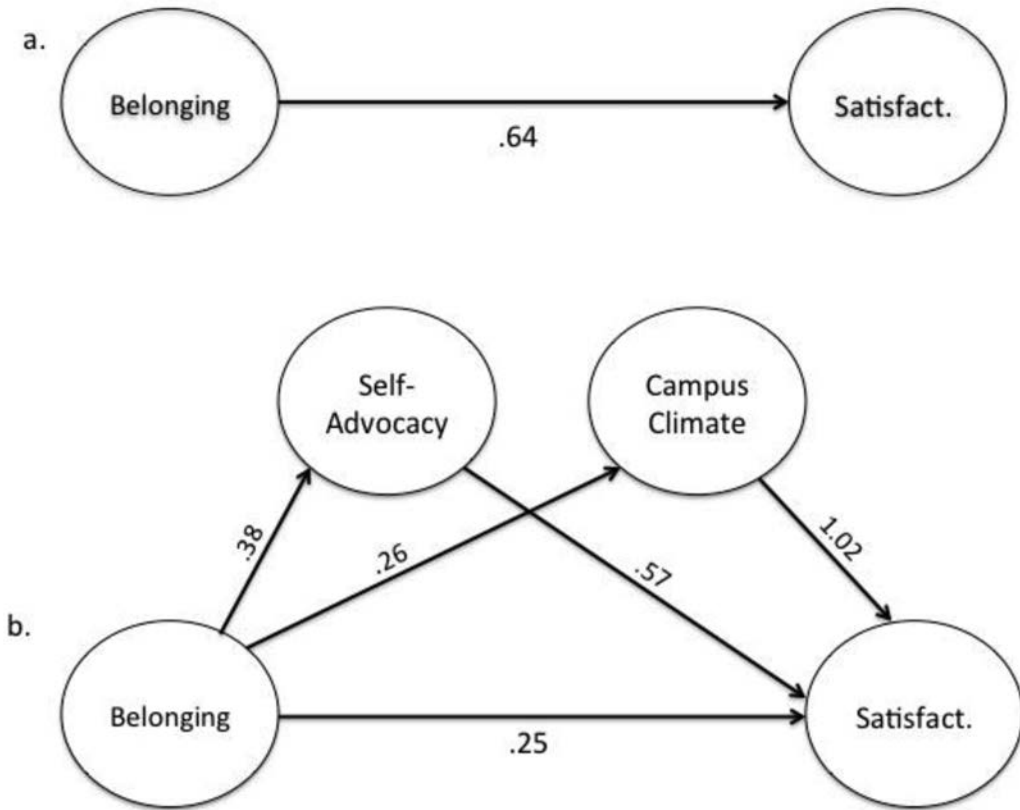


FIGURE 1. Multiple Mediation Model of the Relationship Between Belonging and Student Satisfaction

abilities. Results of an alternative model examining an interactive relationship between self-advocacy and campus climate failed to find a significant causal pathway between self-advocacy and campus climate, confirming the independent contribution of each factor.

DISCUSSION

The purpose of this research was to investigate the relationship between belonging and students' satisfaction with their college choice, and the role of self-advocacy and perception of campus climate. Our intention was to expand on what was known about the experiences of students with disabilities in higher education by conducting research that went beyond disability-specific factors such as accessibility,

accommodations, and attitudes to emphasize the social and environmental perceptions of students. Results of our multiple mediation analysis found that students with a higher sense of belonging were more likely to be satisfied with their college choice and that campus climate and self-advocacy mediated the relationship between belonging and student satisfaction. In other words, students with a higher sense of belonging are more likely to be satisfied because they have a higher sense of self-advocacy and because they have an improved perception of the campus climate. This multifaceted relationship found in our sample, between belonging and self-advocacy in particular, complements the results of a recent qualitative study in which researchers aimed to develop a model of belonging for

college students with disabilities. Vaccarro and colleagues (2015) noted that students interviewed described a complex relationship between belonging and self-advocacy, insofar as increased belonging helped students to self-advocate and pursue social relationships. Our study provides some initial corroborating evidence of this relationship in a quantitative model. These results have some important implications for institutes of higher education, particularly related to shaping the campus environment toward disability and policies related to disability issues. Interventions at the student level (e.g., development of self-advocacy during the student transition phase) and the faculty/staff level (e.g., creating a disability-friendly environment, utilizing inclusive teaching practices) may prove useful in improving university service to students with disabilities.

Belonging

Results suggest that belonging is related to satisfaction among our sample of students with disabilities. This finding is consistent with previous studies of college students and belonging and social experiences, wherein researchers have noted that social perceptions such as belonging predicted performance, persistence, and health indicators (Rotenberg & Morrison, 1993; Walton & Cohen, 2011). Belonging and social support interventions have shown promise in positively affecting students adjustment to the college setting, including among other underrepresented student groups (Mattanah et al., 2010; Walton & Cohen, 2011) and among individuals experiencing loneliness (Cacioppo et al., 2015) by providing a buffer against adversity (Walton & Cohen, 2011). Results from studies evaluating peer-led support programs have found similar benefits for a wider student audience. Authors speculated that the success of the intervention is the opportunity for

students to validate their experiences with peers who have faced similar challenges (Mattanah et al., 2010). For students who are experiencing disability-related bias from faculty/staff or peers, social interventions could prove to be a beneficial buffer against adversity as well. Although the relationship between belonging and college satisfaction found in our sample has been shown across student populations, findings from our study also highlighted the influence of self-advocacy and the campus climate on this relationship.

Self-Advocacy

Results suggest that self-advocacy has the potential to influence the relationship between belonging and satisfaction with the college experience. In previous studies in college populations, personal factors, such as self-esteem, emotional intelligence, self-regulation, and self-concept, have been shown to interact with feelings of belonging and/or exclusion (Murray, Rose, Bellavia, Holmes, & Kusche, 2002; Zysberg, 2015). This is consistent with our findings that, when self-advocacy was considered, the relationship between belonging and satisfaction was altered. Personal factors, such as self-advocacy, may reduce risks among students whose belonging needs are not met. Considered along with findings from other studies in which other personal factors were investigated with respect to belonging and the effect on social behavior, these results provide potentially important information for the development of interventions for college students with disabilities aimed at increasing student satisfaction and, as an extension, persistence.

Strategies that include teaching students self-advocacy and self-determination skills prior to transitioning from secondary education have been found to improve postsecondary outcomes (e.g., Benz, Lindstrom, & Latta, 1999; Essex, 2012; Izzo & Lamb, 2003).

Correspondingly, self-determination skills instruction has been described as one of the “key transition components . . . [that] . . . provide context for shared secondary and postsecondary leadership” (Oertle & Bragg, 2014, p. 6), connected with ability to ask for assistance/accommodations, be proactive in approach to education, and express confidence in one’s ability to be successful (Garrison-Wade, 2012; Hadley, 2006; Lock & Layton, 2001; Merchant & Gajar, 1997; Walker & Test, 2011; Zhang, 2001). Yet, addressing self-determination development as a whole has been challenging (e.g., Algozzine, Browder, Karvonen, Test, & Wood, 2001). Despite mandates that self-advocacy instruction occur as part of special education and transition preparation, Fiedler and Danneker (2007) found limited self-advocacy skill instruction in primary and secondary education and concluded that the majority of students with disabilities were unprepared to be self-advocates in postsecondary situations. Noticeably missing is attention to self-advocacy instruction as it applies to social experiences both inside (e.g., classroom) and outside (e.g., student associations) of academic situations.

College Contextual Competencies. The results from this study indicate that the benefits of increased self-advocacy skills extend beyond that of improved grade point averages to the social factors of improved belonging and satisfaction. In one of the few self-advocacy studies to consider the social context of requesting accommodations, social competence was defined as skills and behaviors that are needed to navigate everyday life (Palmer & Roessler, 2000). Murray et al. (2014) found that low self-advocacy was a key differentiating characteristic among students who were “poorly adjusted” to college, whereas Daly-Cano, Vaccarro, and Newman (2015) found through student narratives that self-advocacy was a key skill utilized in the

college adjustment phase and was often learned through family interactions as well as in early educational experiences. In the postsecondary education context, Conley (2007) combined the need for academic and social competences as “college going knowledge and behaviors, [which are] information about the campus system and norms necessary for successful academic and social navigation” (Baber, Castro, & Bragg, 2010, p. 4). Now referred to as “key transition knowledge and skills” (Bragg & Taylor, 2014, p. 1000), the college-going competencies first described by Conley (2007) include transition to college information and skills as important factors in the postsecondary success of students (Bragg & Taylor, 2014). Interlinking self-advocacy skill development within individuals’ with disabilities transition preparation, while they are still in high school, appears to have an important influence on their preparation and ultimate completion of postsecondary education (Daly-Cano et al., 2015; Essex, 2012; Garrison-Wade, 2012; Oertle & Bragg, 2014). A shift in attention that goes beyond the traditional academic focus to emphasize the social aspects of self-advocacy may be beneficial because of the potential impact of these skills on the success of postsecondary students with disabilities.

Campus Climate

The finding that campus climate mediated the relationship between belonging and student satisfaction is consistent with previous studies of social integration, belonging, and college adjustment of students from underrepresented groups, particularly the experiences of students from racial and ethnic minority groups (Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Fischer, 2007; Hurtado & Carter, 1997) and students with learning disabilities (DaDeppo, 2009). Like students of color, students with disabilities may be subject to negative attitudes or biases from peers, faculty, and staff. These

subvert messages may come in various forms, but the findings from previous studies and the present one has led researchers to suggest that social climate is an important consideration as it relates to satisfaction, and likely persistence, of students with disabilities. Institutions may be unaware of cultural or environmental factors that make it difficult for students with disabilities to feel welcome. Other factors, such as accessibility and availability of disability services and resources, however, are a place for universities to begin to address this issue with students who have documented disabilities. The accessibility and service issue is unique to students with disabilities.

Consistent with previous research, our results indicate a need for colleges and universities to become aware of and carefully consider the impact of faculty and peer interactions with students who have disabilities, particularly those who are requesting accommodations. Researchers in previous studies have highlighted the concerns of students related to accommodations, typically due to stigma associated with disability disclosure and accommodation requests (Dowrick et al., 2005). Faculty awareness of accommodations as access protected by legislation, rather than as a sign that “disability equals inability,” is critical to removing a major attitudinal barrier for students with disabilities (Dowrick et al., 2005, p. 45). Including disability in diversity workshops and events for both students and faculty/staff is another method for facilitating attitude change.

The disability-related perspectives held by disability service providers inadvertently impact how services are delivered (Guzman & Balcazar, 2010). Postsecondary institutions and programs rated as most “disability friendly” appear to have a focus on programmatic rather than simply physical accessibility, a culture that is favorable for students with disabilities, flexibility of course scheduling, academic adjustments, and availability of academic

support (Wilson et al., 2000). A social/universal approach to disability services has more promise to impact the campus climate than do services provided only at the individual level. For example, disability service staff can assist instructors in the development of an accessible curriculum or activity (Cory, 2011).

These findings, while important, must be considered within the context of some 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. We assumed that responses gathered (e.g., perceptions of environmental and social factors) were accurate representations of student experiences and situations. No efforts were made to verify or cross-validate any of the information collected. Additional studies should be conducted to replicate and extend these preliminary findings and to further explore how multiple aspects of student identity (e.g., disability status and visibility, race and ethnicity, gender, sexual orientation, veteran status) influence feelings of belonging and perception of climate among students.

Drawing from the current findings along with that of previous research (e.g., Conley, 2007, Palmer & Roessler, 2000; Tinto, 2001), it appears that postsecondary education retention strategies must go beyond those that offer formal academic accommodations to students with disabilities to strategies that incorporate self-advocacy and social factors, because college retention appears to be dependent on more than academic success alone.

Correspondence concerning this article should be addressed to Allison R. Fleming, apf5208@psu.edu

REFERENCES

- Adams, K. S., & Proctor, B. E. (2010). Adaptation to college for students with and without disabilities: Group differences and predictors. *Journal of Postsecondary Education and Disability, 22*, 166-184.
- Algozzine, B., Browder, D., Karvonen, M., Test, D. W., & Wood, W. M. (2001). Effects of interventions to promote self-determination for individuals with disabilities. *Review of Educational Research, 71*, 119-277.
- Baber, L. D., Castro, E. L., & Bragg, D. D. (2010). *Measuring success: David Conley's college readiness framework and the Illinois College and Career Readiness Act*. Champaign, IL: Office of Community College Research and Leadership, University of Illinois Urbana-Champaign.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.
- Bean, J. P., & Metzner, B. S. (1985). A conceptual model of non-traditional undergraduate student attrition. *Review of Educational Research, 55*, 485-540. doi:10.3102/00346543055004485
- Belch, H. A. (2004). Retention and students with disabilities. *Journal of College Student Retention, 6*, 3-22.
- Benz, M. R., Lindstrom, L., & Latta, T. (1999). Improving collaboration between schools and vocational rehabilitation: The youth transition program model. *Journal of Vocational Rehabilitation, 13*, 55-63.
- Bragg, D. D., & Taylor, J. L. (2014). Toward college and career readiness: How different models produce similar short-term outcomes. *American Behavioral Scientist, 58*, 994-1017.
- Braxton, J. M., Hirschy, A. S., & McClendon, S. A. (2011). Understanding and reducing college student departure. *ASHE-ERIC Higher Education Report, 30*(3).
- 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. Retrieved from http://www.bls.gov/news.release/archives/nlsyth_03012013.pdf
- Bureau of Labor Statistics. (2014). *Employment projections*. Washington, DC: U. S. Department of Labor. Retrieved from http://www.bls.gov/emp/ep_chart_001.htm
- Burgstahler, S., & Doe, T. (2006). Improving postsecondary outcomes for students with disabilities: Designing professional development for faculty. *Journal of Postsecondary Education and Disability, 18*, 135-147.
- Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White students and African American students. *Journal of Higher Education, 70*, 134-160.
- Cabrera, A. F., Castañeda, M. B., Nora, A., & Hengstler, D. (1992). The convergence between two theories of college persistence. *Journal of Higher Education, 63*, 143-164.
- Cacioppo, S., Grippo, A. J., London, S., Goossens, L., & Cacioppo, J. T. (2015). Loneliness: Clinical import and interventions. *Perspectives on Psychological Science, 10*, 238-249.
- Cacioppo, J. T., & Patrick, W. (2009). *Loneliness: Human nature and the need for social connection*. New York, NY: Norton.
- Carnevale, A. P., Smith, N., & Strohl, J. (2010). *Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University Center on Education and the Workforce.
- Conley, D. T. (2007). *Toward a more comprehensive conception of college readiness*. Eugene, OR: Educational Policy Improvement Center.
- Cory, C. R. (2011). Disability services offices for students with disabilities: A campus resource. In W. S. Harbour & J. W. Madaus (Eds.), *New Directions for Higher Education: No. 154. Disability services and campus dynamics* (pp. 27-36). San Francisco, CA: Jossey-Bass.
- DaDeppo, L. M. W. (2009). Integration factors related to the academic success and intent to persist of college students with learning disabilities. *Learning Disabilities Research & Practice, 24*, 122-131.
- Daly-Cano, M., Vaccarro, 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.
- 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.
- Essex, T. (2012). *Special education students with learning disabilities transitioning from high school into community colleges* (Doctoral dissertation). Retrieved from <http://gradworks.umi.com/34/99/3499682.html>
- Fabian, E. S. (2007). Urban youth with disabilities: Factors affecting transition employment. *Rehabilitation Counseling Bulletin, 50*, 130-138.
- Fiedler, C. R., & Danneker, J. E. (2007). Self-advocacy instruction: Bridging the research-to-practice gap. *Focus on Exceptional Children, 39*, 1-20.
- Fischer, M. J. (2007). Settling into campus life: Differences by race/ethnicity in college involvement and outcomes. *Journal of Higher Education, 78*, 125-163.
- Fleming, A. R., & Leahy, M. J. (2014). Using the International Classification of Functioning to conceptualize quality of life among rehabilitation service recipients. *Rehabilitation Research, Policy, and Education, 28*, 2-23.
- 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.
- 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*, 77-84.
- Goenner, C. F., Harris, M., & Pauls, K. (2013). Survival of the fittest: What do early behaviors tell us about student outcomes? *Journal of College Student Development, 54*, 42-59.
- Guzman, A., & Balcazar, F. E. (2010). Disability services' standards and the worldviews guiding their implementation. *Journal of Postsecondary Education and Disability, 23*, 48-61.
- Hall, L. M., & Belch, H. A. (2000). Setting the context: Reconsidering the principles of full participation and meaningful access for students with disabilities. In H. A. Belch (Ed.), *New Directions for Student Services: Vol. 91* (pp. 5-19). San Francisco, CA: Jossey-Bass.

- Hadley, W. M. (2006). L. D. students' access to higher education: Self-advocacy and support. *Journal of Developmental Education, 30*, 10-16.
- Hayes, A. F. (2009). Beyond Baron and Kenney: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*, 408-420.
- Hayes, A. F. (2013). Introduction. In A. F. Hayes (Ed.), *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (pp. 3-22). New York, NY: Guilford.
- Hays, R. D., & DiMatteo, M. R. (1987). A short-form measure of loneliness. *Journal of Personality Assessment, 51*, 69-81.
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation and risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science, 10*, 227-237.
- Horn, L., & Berkotd, J. (1999). *Students with disabilities in postsecondary education: A profile of preparation, participation, and outcomes*. Washington, DC; National Center for Education Statistics.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education, 70*, 324-346.
- IBM. (2014). *SPSS statistics 22.0*. Armonk, NY: Author.
- 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.
- Krumrei-Mancuso, E. J., Newton, F. B., Kim, E., & Wilcox, D. (2013). Psychosocial factors predicting first-year college success. *Journal of College Student Development, 54*, 247-266.
- 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
- Lock, R. H., & Layton, C. A. (2001). Succeeding in postsecondary education through self-advocacy. *Teaching Exceptional Children, 34*, 66-71.
- 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.
- Mattanah, J. M., Ayers, J. F., Brand, B. L., Brooks, L. J., Quimby, J. L., & McNary, S. W. (2010). A social support intervention to ease the college transition: Exploring main effects and moderators. *Journal of College Student Development, 51*, 93-108.
- McCall, Z. A. (2015). The transition experiences, activities, and supports of four college students with disabilities. *Career Development and Transition for Exceptional Individuals, 38*, 162-172.
- Merchant, D. J., & Gajar, A. (1997). A review of the literature on self-advocacy components in transition programs for students with learning disabilities. *Journal of Vocational Rehabilitation, 8*, 223-231.
- Milem, J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationship between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development, 38*, 387-400.
- Murray, C., Lombardi, A., & Kosty, D. (2014). Profiling adjustment among postsecondary students with disabilities: A person-centered approach. *Journal of Diversity in Higher Education, 7*, 31-44. doi:10.1037/a0035777
- Murray, S. L., Rose, P., Bellavia, G. M., Homes, J. G., & Kusche, A. G. (2002). When rejection stings: How self-esteem constrains relationship-enhancement processes. *Journal of Personality and Social Psychology, 83*, 556-573.
- Oertle, K. M., & Bragg, D. D. (2014). Transitioning students with disabilities: Community college policies and practices. *Journal of Disability Policy Studies, 25*, 59-67. doi:10.1177/1044207314526435
- Palmer, C., & Roessler, R. T. (2000). Requesting classroom accommodations: Self-advocacy and conflict resolution training for college students with disabilities. *Journal of Rehabilitation, 66*, 38-43.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects of multiple mediator models. *Behavior Research Methods, 40*, 879-891.
- Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M., . . . Verhagen, M. (2015). Loneliness across the lifespan. *Perspectives on Psychological Science, 10*, 250-264.
- Reinschmiedt, G. H., Spring, 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.
- Rendón, L. I., Jalamo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp. 127-160). Nashville, TN: Vanderbilt University Press.
- Rotenberg, K. J. (1994). Loneliness and interpersonal trust. *Journal of Social and Clinical Psychology, 13*, 152-173.
- Rotenberg, K. J., & Morrison, J. (1993). Loneliness and college achievement: Do loneliness scale scores predict college dropout? *Psychological Reports, 73*, 1283-1288.
- 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.
- Smart, J. F. (2009). The power of models of disability. *Journal of Rehabilitation, 75*(2), 3-11.
- Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational success for all students*. New York, NY: Routledge.
- Test, D. W., Fowler, C. H., Wood, W. M., Brewer, D. M., & Eddy, S. (2005). A conceptual framework of self-advocacy for students with disabilities. *Remedial and Special Education, 26*, 43-54.
- Tinto, V. (2001). Rethinking the first year of college. *Higher Education Monograph Series, Syracuse University*.
- United Nations. (2006). *Some facts about persons with disabilities*. Convention on the Rights of Persons with Disabilities. Geneva, Switzerland: Department of Public Information. Retrieved from <http://www.un.org/disabilities/convention/facts.shtml>
- Vaccaro, A., Daly-Cano, M., & Newman, B. M. (2015). A sense of belonging among college students with disabilities: An emergent theoretical model. *Journal of College Student Development, 56*, 670-684.

- Walker, A. R., & Test, D. W. (2011). Using a self-advocacy intervention on African American college students' ability to request academic accommodations. *Learning Disabilities Research & Practice, 26*, 134-144.
- Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science, 331*, 1447-1451.
- Wilson, K., Getzel, E., & Brown, T. (2000). Enhancing the post-secondary campus climate for students with disabilities. *Journal of Vocational Rehabilitation, 14*, 37-50.
- 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.
- Zhang, D. (2001). The effect of Next S.T.E.P instruction on the self-determination skills of high school students with learning disabilities. *Career Development for Exceptional Individuals, 24*, 121-132.
- Zysberg, L. (2015). Emotional antecedents of psychological loneliness: A review and an emerging model. In D. L. Rhodes (Ed.), *Loneliness: Psychosocial risk factors, prevalence and impacts on physical and emotional health* (pp. 57-72). Columbus, OH: Nova Science.