Understanding the Early Integration Experiences of College Students with Disabilities

Dustin K. Shepler
Ball State University

Sherry A. Woosley
Educational Benchmarking (EBI)

Abstract

This study sought to better understand the early integration experiences of college students with disabilities by examining two research questions: (1) How well do the variables in Tinto's (1993) classic model of student attrition predict the early integration experiences of college students with disabilities? and (2) How do students with disabilities differ from other students with regards to the variables in Tinto's model? A series of four multiple regressions was conducted to determine whether social integration, academic integration, institutional satisfaction, and homesick-related distress could be predicted using variables in Tinto's (1993) model. Results indicated commitment to higher education, perception of on-campus environment, basic academic behaviors, and expected level of involvement in campus organizations allowed for increased predictability compared to pre-entry variables of gender and admissions test scores alone. A series of one-way analysis of variance (ANOVA) tests found that students with disabilities did not differ significantly from students who did not report having disabilities in respect to the independent and dependent variables in Tinto's model. This suggests that the earliest college transition issues for students with disabilities are similar to the issues for other students.

Keywords: Student integration, college transition, student adjustment, student retention, map-works survey

"Adjusting to a college environment presents challenges for all students; however, for students with disabilities, the responsibility of managing their accommodations along with their academic coursework presents a set of challenges that are unique to these students" (Getzel, 2008, p. 208). While a great degree of variation and heterogeneity exists in the population of students with disabilities, it is apparent that they face unique challenges in integrating into college/university life. It is possible that those challenges may be particularly problematic during the initial transition. Research on students in general has demonstrated the importance of the first year of college, and a more limited subset of research has focused on early transition experiences (Woosley, 2003; Woosley & Miller, 2009); yet, early college transition and integration experiences for students with disabilities has been largely overlooked in previous research. This paper sought to address that gap by testing the utility of a traditional model of student persistence with a sample of students with disabilities. It further examined variables in the model and compared students with disabilities to students with no reported disabilities to explore whether the initial transition experiences of students with disabilities were different than or similar to other students to other students.

Students with Disabilities

Although the number of students with disabilities who pursue higher education is increasing (National Center for the Study of Postsecondary Educational Supports [NCES], 2000; National Council on Disability, 2003), their success rates in terms of degree completion have not matched their counterparts (Jones, 2002). This difference appears to be especially true for students with psychiatric disabilities who appear to have especially low college completion rates (Hunt, Eisenberg, & Kilbourne, 2010; Kessler, Foster, Saunders, & Stang, 1995). Thus, researchers have focused

attention on a variety of issues related to the success of college students with disabilities. One theme of the literature regarding students with disabilities and their success in college has focused on accommodations and intervention strategies. Researchers have investigated faculty attitudes regarding accommodations (Ginsberg & Schulte, 2008; Murray, Flannery, & Wren, 2008; Skinner, 2007; Smith, 2010; Zhang, Landmark & Reber, 2010) as well as faculty attitudes towards students with disabilities in general (Cook, Rumrill & Tankersley, 2009; Hong & Himmel, 2009). In addition to the focus on faculty and instructors, researchers have investigated the efficacy of specific intervention strategies such as executive function coaching (Parker & Boutelle, 2009), test-taking strategies (Holzer, Madaus, Bray, & Kehle, 2009), and specific advising models (Ryser & Alden, 2005). This strategy research typically focuses on particular populations of students, including students with ADHD (Parker & Boutelle, 2009; Ryser, & Alden, 2005), Asperger's Syndrome (Wenzel & Rowley, 2010), and learning disabilities (Chiba & Low, 2007; Holzer et al., 2009; Parker & Boutelle, 2009; Ryser, & Alden, 2005; Troiano, Liefeld, & Trachtenberg, 2010) to address best practices in increasing the success of students in these sub-populations. Overall, researchers have found support for addressing faculty attitudes and providing various intervention strategies to increase the success of students with disabilities. Yet the issue of college success for students with disabilities is most likely broader than just faculty attitudes and practices and intervention strategies by other campus professionals.

In addition to faculty and staff responses, researchers have also focused attention on the students themselves. A number of researchers have examined use of services (Collins & Mowbary, 2008), perceptions of services and accommodations (Barnard-Brak, Lechtenberger & Lan, 2010; Cawthon & Cole 2008; Marshak, Van Wieren & Ferrell, 2010), and self-advocacy behaviors and strategies (Barnard-Brak, Sulak, & Tate, 2010; Trammell & Hathaway, 2007). Other researchers have investigated specific student characteristics and compared students with disabilities to students without disabilities. For instance, Estrada, Dupoux, and Wolman (2006) examined locus of control and adjustment, comparing students with learning disabilities to students without learning disabilities. They found no differences in locus of control orientation or personal-emotional adjustment. Hall and Webster (2008) compared metacognitive and affective factors, and found students with learning disabilities had higher levels of initiative and resiliency but lower levels of academic self-efficacy and higher levels of self-doubt than students with no learning disabilities. Adams and Proctor (2010) examined attributional style and found that students with disabilities had a "more internal, stable, and global attributional style" but had lower adaptation and adjustment to college than their peers without disabilities (p. 166). Hong, Ivy, Gonzalez, and Ehrensberger (2007) stated those students with disabilities "in short…are not self-determined" (p. 33) as evidenced by their difficulties in setting and achieving goals, making decisions, and self-advocating for recreational and social opportunities. They also found that students with disabilities were less likely to take on leadership roles, more likely to lack self-control and self-discipline, less likely to have developed facets of their identities, and had poorer academic skills in general (Hong et al., 2007). Therefore, researchers have begun to explore differences between college students with disabilities and those without. Because much of the research has been on small samples, there may still be much to learn about college students.

A third theme of the research is the transition from high school to college. The greatest attrition of college students occurs in the first fall quarter after enrollment (Adler, 1999). This suggests that it is important to investigate early integration experiences of all students; however, students with disabilities may have unique predictors of persistence compared to students with no reported disabilities. In a synthesis of literature, Garrison-Wade and Lehmann (2009) proposed a conceptual framework for understanding the transition to community college, in which they discuss three areas for improving the transition: (1) preparing for the transition (including self-advocacy development), (2) planning the transition, and (3) accessing necessary services and supports at the community college. Addressing the first area of Garrison-Wade and Lehmann's framework, Morningstar et al. (2010) focused on the links between high school preparation and self-determination. Morningstar et al. suggested that high school students' preparation to transition to college was significantly related to their level of self-determination (as measured by three variables: hope, psychological empowerment, and locus of control). DaDeppo (2009) took a broader view, focusing on the "relative influence of background characteristics, precollege achievement,

and college integration" and their impact on academic performance and intent to persist (p. 122). DaDeppo reported that "…while academic and social integration were not unique predictors of college GPA, both integration variables were unique predictors" (p. 122) of students' with learning disabilities intent to continue collegiate level academic work.

In a study of students who had both apparent and non-apparent disabilities, Wessel, Jones, Markle, and Westfall (2009) reported that, regardless of disability status, student retention and graduation rates were similar. However, the same study found that students with disabilities were more likely to drop out during their fourth and fifth years of postsecondary education than their counterparts. This further suggests that time-specific persistence factors may be useful to examine in regard to understanding how students with disabilities persist. Even with limited research (Wessel et al., 2009) regarding persistence of students with disabilities, the college transition experience of students with disabilities has not received broad attention in the research. Such research may be useful in helping to explain the differences seen in the persistence of students with disabilities and those without disabilities.

Overall, there is still much to learn about the successful transition experiences of students with disabilities. Much of the research has focused on faculty perceptions, on comparisons between students with disabilities and those without, and on specific sub-populations. What has not received as much attention is the broader transition (beyond just accommodations) that students experience as they move into the collegiate environment. Tinto's (1993) classic model of student attrition emphasized the longitudinal nature of persistence and attrition decisions. He highlighted the importance of integration into both the social and academic systems of an institution as predictors of persistence. Numerous studies have validated Tinto's constructs as predictors of college students' success and persistence (Allen & Nelson, 1989; Beil, Reaisn, Zea, & Caplan, 1999; Berger, 1997; Berger & Milem, 1999). Research has indicated that factors such as standardized test scores were predictive of student success in the first semester (DeBerard, Spielmans, & Julka, 2004). Such factors are directly related to Tinto's pre-entry characteristics. Similarly, researchers have found that the initial integration experiences are related to both long-term and short-term outcomes for college students (Allen et al., 2008; Woosley, 2003;

Woosley & Miller, 2009). As a result, researchers have suggested that the initial integration experiences may lay a foundation for subsequent experiences and thus may play a critical role in establishing the path and destination of a student. Thus, a better understanding of the initial experiences of students with disabilities may shed light on their transition to college as well as their subsequent completion of a degree. Therefore, this study sought to begin addressing the need to look beyond pre-entry characteristics, such as standardized scores, by examining two research questions:

1. How well do the variables in Tinto's (1993) classic model of student attrition predict the early integration experiences of college students with disabilities?
2. How do students with disabilities differ from other students with regards to the variables in Tinto's model?

Method

Participants

Three weeks into the fall semester of two consecutive years, all enrolled, first-time freshmen at a medium-sized Midwest public university were asked to participate in the university's annual first-year student survey. Of the 5135 students that provided complete responses, 120 students had registered with the university's office of disabled student services and their responses to the survey were used to address the first research question. Admissions records, which use federally mandated race labels, were used to obtain participants' gender, entrance exam scores, and race. The sample was composed of both male students with disabilities (n = 50; 41.7%) and female students with disabilities (n = 70; 58.3%). Of the 120 students who reported having a disability, 86 (71.7%) identified as White while 34 (28.3%) were racial/ethnic minorities or did not respond to the racial/ethnicity demographic item on their admissions application.

To address the second research question and make comparisons between students with disabilities and those with no reported disabilities, data from all first-year students (both those who were registered with the office of disabled student services as well as those who were not) from both fall classes who completed the items required for this study were utilized. The data from the same 120 students used to address the

first search question were also used for this second research question. Data for the comparison group (students with no reported disability) were provided by 5015 students who had completed the first-year student survey but had not registered with the office of disabled student services. Of the 5015 students included in the comparison group, 1982 (39.5%) were male, 3033 (60.5%) were female, and 3865 (77.1%) self-identified as "White" while 1150 (22.9%) self-identified as either a racial/ethnic minority or did not respond to the race/ethnicity demographic item on their admissions application.

Procedure

Data for this study were collected from university records, including records from the annual first-year student survey, institutional records (admissions and demographic data), and a list of students provided by the office of disabled student services. The annual first-year student survey was sent to all first-time freshmen electronically, with two additional reminders sent to non-respondents. The instrument was the *Making Achievement Possible (MAP-Works)* survey (Educational Benchmarking, n.d.), which is used by the university annually. Responses from the *MAP-Works* survey were used to calculate variables. In addition to the survey, data from institutional records were gathered and included SAT and ACT composite scores (which were used to calculate stanine scores; The ACT, n.d.; SAT, n.d), gender, and race/ethnicity information. The list of student identification numbers was obtained from the university's office of disabled student services in order to identify those participants with a documented disability. Consistent with previous research on integration (Wessell et al., 2009), no attempt was made to separate students based on the exact type (e.g., physical versus learning or psychological) or severity of the disabilities reported, nor were any contacts made with students as a part of this study.

Instruments

Tinto's (1993) model suggests that variables used in this study fit into one of three levels. First-level or "pre-entry" entry variables included gender and stanine scores. One second-level variable, "commitment to higher education" (commitment) was identified. Third-level variables included "on-campus environment," "expected self-involvement" (involvement) in campus organizations, and "basic academic behaviors." These

six variables were expected to predict "institutional satisfaction," "social integration" (as measured by the *MAP-Works* "peer connection" scale), "academic integration," and "homesickness-related distress."

MAP-Works Survey. The *MAP-Works* survey has been used at more than 80 institutions of higher education. The survey was designed to assess students' earliest college experiences, provide students feedback about their expectations and behaviors, and assist faculty and staff who may work with the students. Student feedback, which was provided electronically, included individualized feedback based on a student's survey responses, and information about possible campus resources to improve academic performance and social integration. Each of the 24 *MAP-Works* scales is composed of at least two items. Because different scales have different numbers of items, item responses are averaged to provide standardized scores. Scale scores could therefore range from "1" (Not at All) to "7" (Extremely) and scores were treated as continuous variables. Participants were excluded if they did not provide responses to all items used to calculate all scale scores (listwise deletion). Not all scales were used in this study. Only those scales that were used to measure variables relevant to this study are discussed further.

The commitment to higher education scale consisted of two items that asked how committed students were to completing their first year of college as well as how committed they were to completing their college degree. Environment was measured using the four-item on-campus environment scale, including questions about adjusting to campus life and satisfaction with the residence hall experience. The basic academic behaviors scale is a six-item scale that asked students about study habits, such as how well they are able to pay attention in class. Expected level of involvement was measured using a two-item scale, created specifically for this study. The two items asked how involved students thought they would be in campus organizations and how interested they were in holding leadership positions within organizations.

The purpose of this study was to provide answers to two questions. The first question asked how well Tinto's (1993) model explained the experience of students with disabilities. This question led to the hypothesis that Tinto's model would explain a greater amount of variance than gender and academic potential alone. To test this hypothesis, dependent variables consistent

with Tinto's model were identified as social integration, academic integration, institutional satisfaction, and homesick-related distress.

The second purpose was to determine if differences exist in self-reported integration and satisfaction levels between students who report having disabilities compared to students who do not report having disabilities. Based on the existing research, it was hypothesized that students who reported having disabilities would report lower levels of integration and satisfaction. It was also hypothesized that there would be little difference in level of homesickness-related distress between the two groups.

Results

All scales used in this study were found to have internal reliability with Cronbach's alphas ranging from .646 to .921. The Involvement scale (α = .646) and the Commitment scale (α = .688) each have only two items, which likely led to their comparatively lower alpha levels. All individual scale alphas can be found in Table 1.

Research question 1 asked about the extent to which Tinto's (1993) model would better explain students with disabilities' integration experiences than gender and academic potential alone. A series of four multiple regressions was conducted in order to investigate the ability to predict (1) social integration, (2) academic integration, (3) institutional satisfaction, and (4) homesick-related distress. Step-wise regression models (block models) were used to determine whether early experiences added to the predictive power of the models beyond what pre-entry characteristics could predict. Pre-entry variables (gender and stanine score) were included in the first block of each model. Commitment to higher education ("commitment") and pre-entry variables composed the second block of each model. The third block of each model built on the second block by adding how students perceived the on-campus environment ("environment"), students' expected involvement level in campus organizations and clubs ("involvement") and students' self-reported ability to perform basic academic behaviors ("academic behaviors"). Overall, the three-block models were best able to explain variance and predict the dependent variables.

Social integration was examined in the first model. The first block of this model, which included only the pre-entry variables of gender and stanine scores, was not significant $F_{(2, 119)}$ = .625, p = .537, R^2 = .011. The second block, which included pre-entry variables and commitment, was also not significant $F_{(3, 119)}$ = 1.522, p <= .213, R^2 = .038, indicating that when commitment was added to the regression model, the model was not significantly better able to explain social integration. As observed in Table 3, the three-level model was significant $F_{(6, 119)}$ = 7.672, p < .001 and most explanative of the three variations of the model (R^2 = .289). Both on-campus environment (p < .001) and involvement (p = .005) were found to have significant predictive ability in the Social Integration regression model.

A second regression model focused on academic integration. The model using only pre-entry variables was not significant, $F_{(2, 119)}$ = .182, p = .834, R^2 = .003. The second block, that included pre-entry variables and commitment, was also non-significant $F_{(3, 119)}$ = .766, p = .515, R^2 = .019. The third block model, which included previous variables as academic behaviors, involvement, and environment, was significant $F_{(6, 119)}$ = 11.455, p <.001, R^2 = .378, indicating that the hypothesized model was most predictive of academic integration (see Table 4).

To examine institutional satisfaction, a third regression was conducted. The first block, which included only pre-entry variables, was non-significant, $F_{(2, 119)}$ = 2.004, p = .0139, R^2 = .033. The second block model, which included pre-entry variables and commitment, was not significant $F_{(3, 119)}$ = 2.662, p = .051, R^2 = .064. The third model, which included previous independent variables as well as academic behaviors, involvement, and environment, was significant $F_{(6, 119)}$ = 7.136, p < .001, R^2 = .275 (see Table 5).

A fourth regression was used to investigate homesick-related distress. All three blocks were significant; however, predictive ability increased as variables were included in each successive block model. The first block model, $F_{(2, 119)}$ = 3.465, p = .035, R^2 = .056 suggested that pre-entry variables were able to predict homesickness-related distress. Block two was somewhat better at predicting distress, $F_{(3, 119)}$ = 3.905, p = .011, R^2 =.092 than was model one. As hypothesized, the third model was able to explain the greatest amount of variance, with an increase in R^2 of .183 above pre-entry variables alone, and therefore best able to predict homesickness-related distress, $F_{(6, 119)}$ = 5.931, p < .001, R^2 = .273 (see Table 6).

Table 1

Scale Alphas

Factor	# of items	α
Commitment	2	.688
Environment	4	.733
Academic Behavior	6	.819
Involvement	2	.646
Social Integration	4	.921
Academic Integration	5	.920
Institutional Satisfaction	3	.810
Homesickness Distress	3	.876

Table 2

Descriptives & Pearson Correlations of Predictors, n=120

	Mean	SD	1	2	3	4	5	6	7	8	9
Gender [+]	n/a	n/a									
Stanine	5.25	1.21	-.063								
Commitment	6.70	0.61	.056	.011							
Environment	5.79	.968	-.040	-.021	.197*						
Academic Behavior	5.92	0.89	.264**	-.265**	.216*	.195*					
Involvement	4.42	1.64	-.121	.059	.095	.191*	.275**				
Social Integration	5.52	1.23	-.032	-.095	.162	.430**	.292**	.353**			
Academic Integration	5.62	.987	.046	-.034	.130	.199*	.584**	.265**	.289**		
Institutional Satisfaction	5.76	1.02	.103	.143	.185*	.455**	.222*	.136	.347**	.375**	
Homesickness Distress	5.65	1.49	-.187*	.156	.181*	.412**	-.009	.163	.301**	.217*	.484**

+ Gender was coded as male = 0; female = 1; *significant at the 0.01 level, **significant at the 0.05 level (2-tailed)

Table 3

Social Integration Regression Coefficients

	B	SE B	β
Step 1			
Gender	-.096	.229	-.039
Stanine	-.100	.094	-.098
Step 2			
Gender	-.119	.228	-.048
Stanine	-.102	.093	-.100
Commitment	.335	.184	.165
Step 3			
Gender	-.081	.210	-.032
Stanine	-.070	.085	-.068
Commitment	.088	.167	.043
Environment	.439	.106	.345**
Academic Behavior	.191	.129	.138
Involvement	.184	.065	.245*
Constant	.863	1.322	

Notes: $F_{(6, 119)} = 7.672$, $p = .000$, $* = p = .005$, $** = p < .000$

To test hypotheses related to the second question addressed in this study (Do differences in the integration experience exist between students with and without reported disabilities?), a series of one-way analysis of variance (ANOVA) tests was conducted between students with reported disabilities (coded as 1) and students without reported disabilities (coded as 0). Unlike the regression analyses above, data from 5135 student respondents were included. Each of the 5135 students responded to all items necessary to compute scale scores.

For commitment, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities $F_{(1, 5135)} = .745$, $p = .388$ with a partial eta squared effect size of .000. The mean for students with disabilities was 6.700, (SD = .609) and the mean for the students without disabilities was 6.753, (SD = .672).

For campus environment, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities $F_{(1, 5135)} = 1.026$, $p = .311$ with a partial eta squared effect size of .000. The mean for students with disabilities was 5.790, (SD = .968) and the mean for the students without disabilities was 5.885, (SD = 1.018).

For basic academic behavior, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities $F_{(1, 5135)} = 1.085$, $p = .298$ with a partial eta squared effect size of .000. The mean for students with disabilities was 5.921, (SD = .892) and the mean for the students without disabilities was 5.996, (SD = .781).

For involvement, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities $F_{(1, 5135)} = .024$, $p = .878$ with a partial eta squared effect size of .000. The mean for students with disabilities was 4.417, (SD = 1.640) and the mean for the students without disabilities was 4.440, (SD = 1.612).

For social integration, ANOVA results indicated that no significant differences existed between students

Table 4

Academic Integration Regression Coefficients

	B	SE B	β
Step 1			
Gender	.088	.184	.044
Stanine	-.026	.075	-.031
Step 2			
Gender	.074	.184	.037
Stanine	-.027	.075	-.033
Commitment	.207	.149	.128
Step 3			
Gender	-.192	.157	-.096
Stanine	.098	.064	.120
Commitment	-.030	.125	-.019
Environment	.070	.079	.069
Academic Behavior	.679	.097	.614**
Involvement	.040	.048	.066
Constant	.823	.990	

Notes: F (6, 119) = 11.455, p = .000, ** = p = .000

with disabilities and students without disabilities F(1, 5135) = .337, p = .562 with a partial eta squared effect size of .000. The means for students with disabilities and those without were 5.523, (SD = 1.232) and 5.591, (SD = 1.277), respectively.

For academic integration, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities F(1, 5135) = 2.526, p = .112 with a partial eta squared effect size of .000. The mean for students with disabilities was 5.622, (SD = .941) and the mean for the students without disabilities was 5.760, (SD = .940).

For institutional satisfaction, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities F(1, 5135) = .973, p = .324 with a partial eta squared effect size of .000. The mean for students with disabilities was 5.763, (SD = 1.021) and the mean for the students without disabilities was 5.862, (SD = 1.075).

For homesick-related distress, ANOVA results indicated that no significant differences existed between students with disabilities and students without disabilities F(1, 5135) = .567, p = .451 with a partial eta squared effect size of .000. The mean for students with disabilities was 5.65, (SD = 1.494) and the mean for the students without disabilities was 5.750, (SD = 1.432).

Discussion

Data were collected from students with and without disabilities three weeks after they began their first semester of college. Four regression models, each with three-block levels, were conducted in order to investigate whether adding theoretically derived variables could better predict which factors may allow increased accuracy in predicting students with disabilities' integration experience to university life. Results generally suggest that Tinto's (1993) model is better at explaining early integration experiences than

Table 5

Institutional Satisfaction Regression Coefficients

	B	SE B	β
Step 1			
Gender	.232	.188	.112
Stanine	.127	.077	.150
Step 2			
Gender	.211	.186	.102
Stanine	.125	.076	.148
Commitment	.297	.151	.177
Step 3			
Gender	.183	.176	.089
Stanine	.167	.071	.198
Commitment	.102	.140	.061
Environment	.443	.088	.419**
Academic Behavior	.176	.108	.154
Involvement	.004	.054	.007
Constant	.474	1.107	

Notes: Note: F (6, 119) = 7.136, p = .000, ** = p = .000

pre-entry variables alone. Specifically, students with disabilities perceptions of the on-campus environment and their expectations for involvement with campus organizations were significant factors in predicting their social integration (e.g., making friends). Results also suggest that basic academic behaviors, such as study skills and participation in classes, allowed for greater explanation of students with disabilities self-reported academic integration. Interestingly, commitment to completing a degree was not a significant factor in predicting academic integration. Logically, this finding may be because most students who take the time to apply and commit to enrolling in a university have already decided that they were committed to earning a degree.

This logical inference has direct implications for secondary educational settings and families of students with disabilities. Secondary education professionals (e.g., special education instructors and guidance services professionals) and family members may play a key role in helping students with disabilities achieve in postsecondary education settings in key ways. Educators and family members can assist students with disabilities in recognizing their potential by working with students to set realistic goals. Such goal setting may be most effective when not limited to simply determining a major. Instead, professionals and family members should work with students to examine what types of institutional support, choice of majors, and student organizations or student life exist at various institutions. Such planning may contribute to students' success in transitioning from high school to postsecondary study and the university social milieu.

After the student selects an institution and gains acceptance, guidance counselors and special education professionals may further contribute to the students' integration experience by working together and with students to plan. For example, secondary professionals may recognize what types of interventions have led to a student's success in high school and communicate this information to postsecondary specialists in pre-

Table 6

Homesickness-Related Distress Regression Coefficients

	B	SE B	β
Step 1			
Gender	-.538	.272	-.178
Stanine	.178	.111	.144
Step 2			
Gender	-.571	.268	-.189*
Stanine	.175	.109	.142
Commitment	.465	.217	.190*
Step 3			
Gender	-.447	.263	-.148
Stanine	.166	.106	.135
Commitment	.287	.209	.117
Environment	.592	.132	.383**
Academic Behavior	-.089	.162	-.053
Involvement	.062	.081	.068
Constant	-.058	1.658	

Notes: $F (6, 119) = 5.931$, $p = .000$, * = $p < .05$, ** = $p = .000$

arranging academic expectations (e.g., appropriate course planning, transportation, and number of credit hours for which a student should enroll) and services (e.g., note takers, scanning textbooks into electronic format, access to mental health or psychiatric services and learning center tutors). By involving students in this planning process, they may experience increased commitment to obtaining a degree and feel more confident, or self-determined, in their ability to complete their academic (and social) goals. Although preparation, planning, and communication are essential in developing strategic goals and services and families and students can take part in this process, families may provide yet another asset in the transition and early integration experience.

Family members (and professionals) should be aware that homesickness is a normal experience for many college students and that the feelings of homesickness experienced by students with disabilities may differ very little from that experienced by students without disabilities. Normalizing homesickness and encouraging independence and self-advocacy is likely to not only increase students' self-determination, but also improve their understanding of institutional procedures. As students with disabilities integrate into the postsecondary setting, family members may also need to change the way in which they offer support and encouragement. Instead of taking responsibility, advocating, and coordinating accommodations, parents may best serve their college-aged children by encouraging them to continue developing a sense of independence and self-sufficiency. Such self-directed involvement may assist students in developing valuable working relationships with campus personnel, such as disability services professionals, that can deepen their sense of connection to the university community. Feeling connected to university professionals and included in social groups is likely to lead to higher levels of institutional satisfaction and perception of the campus environment.

Institutional satisfaction was also better explained by examining students with disabilities' perceptions of the campus environment. Not surprisingly, those students who reported more positive feelings about the campus environment were more likely to be satisfied with the institution in general. Further research is needed in order to determine the role of academic work in the area of institutional satisfaction. Like institutional satisfaction, students with disabilities' ratings of the campus environment was inversely related to their reported level of homesickness-related distress. Those students who liked the campus environment were less likely to experience distress related to missing family and friends from "back home."

Consistent with Tinto's (1993) model, the results of this study suggest that the evaluation of the campus environment may be especially important to the earliest integration experiences of students with disabilities. If the implications of Tinto's model are true longitudinally, then further research may be able to explore the potential long-term impact of campus environment on outcomes beyond initial integration such as persistence and graduation. It should be noted that this study was done on a single campus with an office dedicated solely to supporting students with disabilities. The office covers financial obligations associated with having student note takers attend classes with students who qualify for such services, works with faculty to determine appropriate classroom accommodations and match students with faculty mentors, provides other academic-related services, offers programming directed at students with disabilities, and sponsors an organization for students with disabilities. As any single campus study, this one is limited by the experience of the students on that campus. Further research is necessary to determine if the results from this study are applicable in other campus contexts.

Another caveat that applies to this research is the limitations of population and data sources used. The sample of students with disabilities included only those who had registered with an office for students with disabilities. It is possible that students with disabilities may not have registered, either because they did not want or need services, were unaware of the availability of services, or were ineligible to receive accommodations. Regardless, our sample was thus limited to students who were registered; students who had not registered were then in the comparison group. In addition, the analysis for this study did not differentiate students based on the type of disability. Previous research has largely focused on specific sub-populations of students with disabilities, such as those with learning disabilities. It is possible that the type of disability may affect perceptions and predictors of integration. Thus, future research should also further explore whether the relationships found in this study are consistent across groups of students with different types of disability.

Overall, the findings of this study suggest that no significant differences exist between students who report having disabilities and those who do not report having disabilities in regards to social integration, academic integration, homesickness-related distress, and institutional satisfaction. In no instance did responses obtained by those in each group differ significantly, which suggests that the hypothesized relationship between disability status and university integration experiences were not accurate. Results suggest instead that students with disabilities integrate in a similar manner to students without disabilities and that their experiences are more comparable than previously suggested. Further replication of these findings is essential to determine whether these results are specific to the sample or campus or, if instead, they represent a broader, more accurate view of how students with disabilities are successfully integrating into university life. Future studies should also attempt to increase accuracy in the categorization process in some manner, such as including an open-ended item in the first-year survey asking students to list any disabilities they may have and cross-checking to ensure that students are classified appropriately.

Overall, results support the hypothesis that Tinto's (1993) model is applicable in understanding the integration of students with disabilities. This finding may support future research that seeks to apply this specific model to persistence and degree-completion studies. Furthermore, findings suggest that students, regardless of disability status, are likely to respond similarly when campus environment, commitment to obtaining a degree, basic academic behaviors, and expected level of involvement in campus organizations are factors of interest. This set of findings, if replicated and found to be generalizable, is of interest both to those who practice in offices for students with disabilities, those who work in university counseling centers who serve a population that includes students with disabilities, and those who conduct research to better understand

the university experience of students with disabilities. Taken together, the findings reported in this study may suggest that more similarities than differences exist between new students with and without disabilities.

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About the Authors

Dustin Shepler, M.A. received his B.A. in Psychology and Sociology from The University of Findlay. He earned his M.A. in Social Psychology and Counseling, as well as a graduate certificate in Institutional Research from Ball State University. He is currently completing his Ph.D. studies in Counseling Psychology at Ball State University where he is active in various research projects and has taught undergraduate classes. He has also provided outreach and counseling services to college students and high school students throughout his training. His research interests include identity development, sexuality, and counselor competency. Dustin can be reached by email at: dkshepler@bsu.edu.

Sherry Woosley, Ph.D. received her BS in Secondary Education from University of Vermont, and M.A. and Ph.D. from University of California, Santa Barbara. Her experience includes working in institutional research and assessment for Ball State University, where she founded a graduate level program in institutional research. Dr. Woosley is nationally recognized for work in assessment and predictive analytics. She is currently the Director of Analytics and Research at EBI. Her research interests include college student success, the transition to college, and assessment methods. She can be reached by email at: swoosley@webebi.com.