

Retention and Graduation of Students with Disabilities: Facilitating Student Success

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Abstract

In this longitudinal study of 11,317 students, the retention and graduation rates of students with apparent and nonapparent disabilities were compared to students without disabilities. The annual retention and graduation rates (six years after matriculation) were similar for all students, regardless of the presence or absence of a disability except for variations during years four and five. The mean number of years required to graduate were similar for all students, regardless of the presence or absence of a disability. Examples of institutional interventions for disability services offices are provided to facilitate student success among students with disabilities.

As more colleges and universities focus on enrollment management, retention plays an increasingly important role. Retention has been referred to as the painless recruiter (Wright, 1995). Every student that stops attending college, for whatever reason, has to be replaced; thus, making enrollment management more challenging. *The Digest of Educational Statistics* (Synder, Tan, & Hoffman, 2004) reported that among the more than 19 million students in American colleges and universities, 8.7% of them, 1,669,000 undergraduate and graduate students, had disabilities. deFur, Getzel, and Trossi (1996) said that “the likelihood of earning a degree is decreased by the presence of a disability” (p. 232). Many colleges and universities have disability services offices to help facilitate access to higher education and the academic success of students with disabilities, reducing the number of students with disabilities that drop out of college.

Access, Retention, and Attrition

The theoretical framework for this study rests in the retention literature, among the college impact models as identified by Pascarella and Terenzini (2005). Tinto’s

(1993) interactional theory of individual departure from institutions of higher education focused on the college attrition process. He identified three distinct phases of association with other members of an institution: separation from communities of the past, transition between high school and college, and incorporation into the society of the college. Tinto’s subsequent work addressed effective formal and informal institutional retention interventions that result in persistence to graduation from college. The foundation of Tinto’s work was Van Gennep’s (1909/1960) anthropological study that identified a three-stage model on rites of passage of tribal societies: separation, transition, and incorporation. A revision of Tinto’s student departure theory for residential colleges and universities suggested six influences on social integration that impacted retention: commitment of the institution to student welfare, communal potential, institutional integrity, proactive social adjustment, psychological engagement, and ability to pay (Braxton, Hirschy, & McClendon, 2004). The revision for commuter colleges and universities was more complex with sixteen economic, organizational, psychological, and sociological considerations.

Attrition can be influenced by the social and academic backgrounds of students, as well as other out-of-class learning factors (Ratcliff, 1991). These factors were divided into three large categories: student characteristics, environmental characteristics, and interaction (Beal & Noel, 1980). Retention can also be influenced by “a set of factors external to the institution, such as finances or family responsibilities, that draw an individual away from college” (Eaton & Bean, 1995, p. 618).

Belonging, involvement, purpose, and self-determination were identified as important factors affecting retention for college students with apparent and nonapparent disabilities (Belch, 2004). Some authors, approaching retention from an ecosystems perspective, discussed the importance of minimizing obstacles and barriers for students with disabilities so that they would be served more effectively (e.g., Nutter & Ringgenberg, 1993).

Institutional interventions to encourage academic persistence can take many forms. Encouraging student persistence to graduation is not the responsibility of one office but several offices across multiple divisions of a university (Hossler, 1996). Each university department has a role to play; “support systems and programs assist students to move successfully through the college or university” (Chickering & Reisser, 1993, p. 444). Many colleges have an office dedicated to access for students with disabilities and disability support services whose role is to “provide academic services such as note takers . . . improve physical access on campus for students with mobility challenges, advise students about their rights and responsibilities, and provide outreach and consultation to other campus offices and academic units” (Komives, Woodard, & Associates, 2003, p. 346). Disability services staff advocate for students with disabilities, working on their behalf and for the institution to provide appropriate support services. Twenty-seven program standards for disability service offices were identified (Shaw & Dukes, 2001). Many disability services offices in colleges and universities are members of the Association on Higher Education And Disability (AHEAD, 2004), a professional association committed to “full participation of persons with disabilities in postsecondary education” (¶ 1).

Academic Success for Students with Disabilities

Berkner, Curraro-Alamin, McCormick, and Bobbit (1996) studied the academic persistence of undergraduates with and without disabilities. Students who first began college in 1989-90, and followed up on in 1992 and 1994, were included in the study. Students with disabilities had lower persistence and graduation rates than students without disabilities. Fifty-three percent of students

with disabilities had persisted (defined as having obtained a degree or still enrolled) compared with 64% of students without disabilities. Forty-one percent of students with disabilities had graduated compared with 51% of students without disabilities. Zang (1996) found that the retention variable of intent to persist was a significant indicator of academic persistence for community college students in a northwestern Oklahoma community college

Students with learning disabilities in high school were less likely to attend college and were less likely to graduate than were their peers without learning disabilities (Murray, Goldstein, Nourse, & Edgar, 2000). Within five years of graduation from high school, most (80.5%) of the learning disabled students had not graduated, and of those who had graduated, 15.9% had graduated from training/vocational programs, and 3.6% had graduated from a community college or four-year college programs. Adler (1999) examined why community and technical college students with apparent and nonapparent disabilities, who were using the disability student services office, dropped out of college. She found that the dropout rate was highest during the first part of the quarter and that the largest number of dropouts did so in the fall quarter. The same reasons for dropping out were provided by both students with and without disabilities (financial problems, personal problems, work); however, the students with disabilities said that stress of school, health, problems with medications, and weather conditions also impacted their enrollment.

The educational outcomes of students with disabilities might be dissimilar to those without disabilities (Horn, Berkold, & Bobbitt, 1999). In many respects the two groups of students differed when considering characteristics associated with leaving college. These attributes were correlated with age and were shown to impede postsecondary and degree attainment. For example students with disabilities, when compared with their counterparts without disabilities, were more likely to delay their college attendance a year or more after finishing high school (43 versus 32 percent). They were also more likely to have earned a GED or alternative high school credential (12 versus 6 percent), to have dependents other than a spouse (25 versus 13 percent), and to have financial and family obligations that potentially conflicted with their schooling. Horn, Cataldi, and Sikora (2005) found that undergraduates who delayed entrance to college after high school were at a significant disadvantage to students who entered college immediately after high school.

The purpose of this longitudinal study was to determine if students with apparent disabilities (hereafter referred to as SWADs) and students with nonapparent

disabilities (hereafter referred to as SWNDs) differed in their initial academic potential and were retained and persisted to baccalaureate graduation at different rates than students without disabilities (hereafter referred to as SWODs). Previous research indicated that Scholastic Aptitude Test (SAT) scores, gender (DeBerard, Spielmans, & Julka, 2004), and HS percent standing (Rugsaken, Robertson, & Jones, 1998) among other variables were predictive of academic success in the student's first semesters of college work. These variables were included and controlled for in the analyses to help isolate the effect of the student's disability classification on retention, graduation, and stop-out rates. Additionally, we sought to determine if stop-out rate variations could be predicted from the student's disability status (i.e., SWADs, SWNDs, SWODs). The study sought to answer three key questions. Is there a difference in the retention and graduation rates among SWADs, SWNDs, and SWODs? Is there a difference in how long it takes for SWADs, SWNDs, and SWODs to graduate? Does the student's disability classification (SWADs, SWNDs, SWODs) impact the stop-out rate (attrition event) after controlling for other predictors?

Method

Participating Students

For the purpose of this study students with apparent disabilities (i.e., SWADs) were defined as having physical disabilities such as mobility impairments, hearing impairments, or visual impairments. Students with non-apparent disabilities (i.e., SWNDs) were defined as having cognitive disabilities, such as learning disabilities or attention deficit disorder; psychological disabilities; or chronic health disabilities, such as cancer or heart disease. Students were classified into one of these two groups by the disability services office based upon the medical verification information received from medical professionals independent of the university. Students without disabilities (i.e., SWODs) did not have apparent or nonapparent disabilities. Students with disabilities (hereafter referred to as SWDs) was a broader term that included students with both apparent and nonapparent disabilities.

The population consisted of 11,317 matriculating freshmen during the summer and fall semesters of 1994, 1995, and 1996. These three years were chosen to allow the researchers an eight year window from matriculation to observe graduation rates. An eight year window was selected because the researchers believed that SWDs may need a year or two more to achieve the same graduation rates as SWODs. The sample equaled the population. The population was divided into three groups: 81

SWADs, 92 SWNDs, and 11,144 SWODs.

Setting

The study took place at a public, four-year, Carnegie doctoral-granting institution in the Midwest. The university had 20,000 students, 17,000 undergraduates and 3,000 graduate students. The university focused on residential undergraduate education with emphases on the professions plus the arts and sciences. The role of the Office of Disability Support Services (hereafter referred to as ODSS) at this institution was to facilitate student success by providing access and opportunity for SWDs. As an institution receiving federal funding, the university abides by the provisions of Section 504 of the Rehabilitation Act of 1973 (referred to as 504) and the Americans with Disabilities Act of 1990 (referred to as ADA). According to 504:

No otherwise qualified person with a disability in the United States . . . shall, solely by reason of her or his disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance (Rehabilitation Act of 1973, § 794).

For students who want a disability-related accommodation ODSS staff review documentation, which students provide, to determine if the request is reasonable and appropriate according to 504, the ADA, and the university's policies. The ODSS attempts to find the balance between the legitimate civil rights of SWDs and the essential standards that the university expects of all students. Commonly provided accommodations include extended time on examinations, sign language interpreters, note-takers, textbooks provided in alternative formats, and priority class scheduling.

Data Collection Procedures

Students with disabilities, thus qualifying for services and reasonable accommodations from ODSS, were verified by the official statistic day, the first Saturday following the first day of classes during the fall semester. Data were collected from university databases on retention and graduation rates for each student. Retention was defined as the student being enrolled in at least one course for credit, and retention rates were checked at the beginning of the fall semester of the second through eighth years after matriculation. Baccalaureate graduation rates were checked at the completion of the summer semester of the third through eighth years after matriculation. Data collection was reviewed and verified by two independent individuals who both had access to university databases and were able to insure the accuracy of the data that had been extracted.

Data Analysis Procedures

Quantitative research methodology was selected because it allowed for statistical techniques to analyze the data (Gall, Borg, & Gall, 1996), with factorial ANOVA, chi square test of association, Cox regression, and logistic regression used in the data analysis depending upon the hypothesis being tested and the nature of the data involved. In addition to the retention and graduation variables, HS percent standing ($(1 - \text{HS rank} / \text{HS size}) * 100\%$), the verbal and quantitative SAT scores, gender, and disability classification for each student were extracted from the student database. The statistical analysis was conducted by a university statistician who assists with research that may be conducted by faculty, staff, or university offices.

Results

Participant Demographics

The 11,317 student cohort group consisted of 3,619 students from 1994, 3,903 students from 1995, and 3,795 students from 1996. There were more females ($n = 6,116$; 54%) than males ($n = 5,201$; 46%), and 9% ($n = 1,019$) of the students were minorities. Overall, the students had a mean high school percent standing of 62.25. An ANOVA comparing high school percent standing by gender and disability type was run but found to have violated the equal variance assumption (Levene's test, $F(5, 9,411) = 6.24, p < .001$). After reducing all the larger cells to the same size as the smallest cell by the random elimination of cases within the cell, a second ANOVA met the equal variance assumption. Overall, females had a higher high school percent (65.57) standing than males (55.34; $F(1, 156) = 11.30, p < .001$), and SWNDs had lower standing (52.17%) than either SWODs (62.15%) or SWADs (67.04%; $F(2, 156) = 8.28, p < .001$). There was also an interaction of gender by disability in which females had higher standing than males, except in the SWAD condition ($F(2, 156) = 3.81, p = .024$). For SWADs, males and females were of nearly identical HS percent standing.

The SAT verbal and quantitative scores were also compared for gender and disability type in separate two-way ANOVAs. Although the overall SAT verbal mean score was 498.54, SWNDs had a lower mean score (448.64) than either SWODs (498.92) or SWADs (499.06; $F(2, 8,590) = 10.10, p < .001$). For the SAT quantitative score, the overall mean was 496.47, with SWNDs having a lower mean score (460.99) than SWODs (497.96) but not SWADs (476.81; $F(2, 8,590) = 6.63, p < .001$). Regardless of disability, males had a higher SAT quantitative score (500.63) than females (456.54; $F(1, 8,590) = 16.07, p < .001$). No interactions were found for either type of SAT score.

Retention and Graduation Rates

Approximately one percent of both SWODs and SWDs ($n = 131$ and $n = 2$, respectively) pursued a two-year rather than a four-year degree. For consistency, these students were dropped from the sample for the comparisons of retention and graduation outcomes, resulting in a sample size of 11,184 students. As shown in Table 1, the students were followed longitudinally for eight years, and with the exception of two years, had similar retention and graduation rates. At year four, SWNDs had a lower a graduation rate (11.96%) than either SWODs (20.38%) or SWADs (18.99%), and also had the lowest non-retention rate (38.04% versus 45.08% for SWODs and 40.51% for SWADs). By year five, the graduation rate for SWNDs (41.30%) was nearly the same as SWODs (42.05%), but SWADs fell behind (36.71%). Non-retention rates for SWNDs (42.39%) and SWADs (43.04%) were similar and lower than that of SWODs (47.67%). For subsequent years, the retention and graduation rates did not show statistically significant differences among the three groups. For 5,558 students who did obtain a four-year degree by the conclusion of the eighth year, the mean number of years required was 4.45 for all students, with SWODs, SWNDs, and SWADs students taking 4.44, 4.67, and 4.61 years to graduate, respectively. However, a two-way ANOVA comparing years taken to graduate, using the factors gender and disability type, found no significant main effects or interactions.

Using a Cox regression, gender, disability group, SAT verbal and quantitative scores, and HS percent standing were regressed on graduation outcome to assess the impact of disability, after controlling for gender and indicators of academic aptitude. The regression as a whole was statistically significant ($\chi^2 = 982.63, df = 6, p < .001$; $\Phi = .34$), but the individual effect of disability was not (Wald = 2.12, $df = 2, p = .347$). There were significant effects for SAT quantitative scores (Exp(B) = 1.001; Wald = 19.07, $df = 1, p < .001$), HS percent standing (Exp(B) = 1.018; Wald = 459.48, $df = 1, p < .001$), and gender (Exp(B) = 1.187; Wald = 31.15, $df = 1, p < .001$), indicating that higher SAT quantitative scores, higher HS percent standing, and being female resulted in reductions in the number of years needed for a student to graduate.

Stop-out Rates

Although graduation for this sample was a clear event, students may stop-out (i.e., withdraw or fail to register for a semester or more) but return at a later time, making retention a variable event. For the purpose of this analysis, any stop-out (attrition) event occurring within the eight year span was counted as stop-out event, even

Table 1*Retention and Graduation Status by Student Disability Group*

Year	Group ¹	Not Retained ²		Retained ²		Graduate ³		χ^2	p ⁴
1	SW <u>Q</u> D			11,013	(100%)				
	SW <u>N</u> D			92	(100%)				
	SW <u>A</u> D			79	(100%)				
2	SW <u>Q</u> D	3,427	(31.12%)	7,586	(68.88%)	0	(0%)	.68	.71
	SW <u>N</u> D	31	(33.70%)	61	(66.30%)	0	(0%)		
	SW <u>A</u> D	22	(27.85%)	57	(72.15%)	0	(0%)		
3	SW <u>Q</u> D	4,484	(40.72%)	6,490	(58.93%)	39	(.35%)	1.58	.81
	SW <u>N</u> D	37	(40.22%)	55	(59.78%)	0	(0%)		
	SW <u>A</u> D	28	(35.44%)	51	(64.56%)	0	(0%)		
4	SW <u>Q</u> D	4,965	(45.08%)	3,804	(34.54%)	2,244	(20.38%)	11.67	.02
	SW <u>N</u> D	35	(38.04%)	46	(50.00%)	11	(11.96%)		
	SW <u>A</u> D	32	(40.51%)	32	(40.51%)	15	(18.99%)		
5	SW <u>Q</u> D	5,250	(47.67%)	1,132	(10.28%)	4,631	(42.05%)	12.04	.02
	SW <u>N</u> D	39	(42.39%)	15	(16.30%)	38	(41.30%)		
	SW <u>A</u> D	34	(43.04%)	16	(20.25%)	29	(36.71%)		
6	SW <u>Q</u> D	5,403	(49.06%)	404	(3.67%)	5,206	(47.27%)	2.17	.70
	SW <u>N</u> D	42	(45.65%)	4	(4.35%)	46	(50.00%)		
	SW <u>A</u> D	36	(45.57%)	5	(6.33%)	38	(48.10%)		
7	SW <u>Q</u> D	5,442	(49.41%)	187	(1.70%)	5,384	(48.89%)	.98	.91
	SW <u>N</u> D	42	(45.65%)	1	(1.09%)	49	(53.26%)		
	SW <u>A</u> D	38	(48.10%)	1	(1.27%)	40	(50.63%)		
8	SW <u>Q</u> D	5,429	(49.30%)	115	(1.04%)	5,469	(49.66%)	1.33	.86
	SW <u>N</u> D	42	(45.65%)	1	(1.09%)	49	(53.26%)		
	SW <u>A</u> D	39	(49.37%)	0	(0%)	40	(50.63%)		

Notes.

1 SWQD is students without disabilities. SWND is students with nonapparent disabilities. SWAD is students with apparent disabilities.

2 Status at beginning of the academic year.

3 Status by end of the academic year.

4 $DF = 4$.

if the student later returned. With the outcome variable of retention coded as 1=any attrition within the eight years and 0=continuous retention up to graduation, a logistic regression was run with gender, disability group, SAT verbal and quantitative scores, and HS percent standing as covariates. The overall regression was statistically significant ($\chi^2=953.52$, $df=6$, $p<.001$; $\Phi = .29$) with the coefficients for the covariates shown in Table 2 gender, SAT quantitative score, HS percent standing, and disability group were all statistically significant predictors. Males and students with low SAT quantitative scores and HS percent standing had greater risk of an attrition event. Compared to males, females had their odds of attrition reduced 19% ($Exp(B)=.807$; $Wald=18.20$, $df=1$, $p<.001$); each 10 point gain in the SAT quantitative score would reduce odds of attrition by 2% ($Exp(B)=.998$; $Wald=25.61$, $df=1$, $p<.001$); and each one point increase in HS percent standing lowered odds of attrition by 3.8% ($Exp(B)=.972$; $Wald=453.84$, $df=1$, $p<.001$), after controlling for the other variables in the model. Disability also affected the odds of attrition, but SWNDs as compared to SWODs decreased the odds ratio of attrition by 56% ($Exp(B)=.438$;

$Wald=7.57$, $df=1$, $p=.006$). The original odds ratios for an attrition event for SWNDs and SWADs to SWODs were .6675 and .7322, respectively, based on odds of attrition of .8371, .5588, and .6129 for SWODs, SWNDs, and SWADs, respectively. After controlling for the other variables in the model, the new odds ratio for an attrition event for SWNDs to SWODs dropped from .6675 to .2924. Thus, SWNDs actually had a lower predicted risk of attrition than SWODs once academic aptitude and gender were controlled. The original odds ratio of 19 students with non-retention events to 34 students who were retained to graduation would become approximately a 10 to 43 ratio if effects of academic aptitude and gender could be mitigated for the SWNDs group.

Discussion

The data from this study both confirm and challenge the findings of other researchers relating to the retention and graduation rates of students with disabilities. deFur et al. (1996) reported that the likelihood of earning a degree was decreased when a student had a disability.

Table 2

Prediction of Attrition Events Within an Eight Year Span

Covariates	Unstandardized		Wald	df	p	Exp(B)	95.0% C.I. for Exp(B)	
	B	S.E.					Lower	Upper
Disability ¹			8.24	2	.016			
SWND vs. SWOD; (SWOD=0)	-.825	.300	7.57	1	.006	.438	.243	.789
SWAD vs. SWOD; (SWOD=0)	-.255	.307	.69	1	.405	.775	.425	1.413
Gender; 0=Male, 1=Female	-.214	.050	18.20	1	>.001	.807	.732	.891
SAT scores								
Verbal	>.001	>.001	.250	1	.617	1.000	.999	1.001
Quantitative	-.002	>.001	25.61	1	>.001	.998	.997	.999
HS Percent Standing	-.028	.001	453.84	1	>.001	.972	.970	.975
Constant	2.518	.169	222.32	1	>.001	12.409		

Note.

¹ SWOD is students without disabilities. SWND is students with nonapparent disabilities. SWAD is students with apparent disabilities.

That conclusion did not hold true in this study. The retention and graduation rates for all students, regardless of the presence or absence of a disability (i.e., SWODs, SWADs, and SWNDs) were similar, except for variations during years four and five. During years two and three, and again during years six through eight, the retention and graduation rates were statistically the same across all student categories, with SWNDs and SWADs actually having slightly higher graduation rates than SWODs.

Why did SWNDs graduate in year four at a lower rate than did SWODs and SWADs? The researcher's observation is that many SWNDs, typically students with cognitive disabilities such as learning disabilities and attention deficit disorder, may take the lowest number of credit hours possible to maintain full-time status. As a result, they are retained annually but may take a semester or two longer than other students to graduate. It was also observed that SWADs may take slightly longer to graduate because many SWADs, especially those with severe disabilities, often have several semesters in which they take less than a full load and have semesters where medical concerns have an impact on their ability to take classes.

The mean number of years that were required to obtain the bachelors degree were essentially the same for all students, regardless of the presence or absence of a disability. The average years for degree completion for SWODs were 4.44 compared with 4.67 for SWNDs and 4.61 for SWADs.

In examining the impact of disability on years taken to graduate, other factors were found to play more important roles. The student's academic aptitude, as measured by SAT scores or prior academic standing in HS, indicated that the better academically prepared students took less time and were less likely to drop out of school, as suggested by Ratcliff (1991). Also, female students tended to require less time needed to graduate and have less risk of attrition than their male counterparts. After controlling for academic aptitude and gender, having a disability did not significantly impact the length of time required for the student to complete a four-year degree. When it came to risk of attrition, SWNDs actually had a lower predicted risk of attrition as compared to SWODs once academic aptitude and gender were controlled.

Providing Access and Facilitating Student Success

ODSS staff often advocate for students with disabilities by providing access to higher education: that is a very appropriate role. Because of its history of providing access, opportunity, and facilitating success for students with disabilities, the ODSS at the institution where this study took place is especially well regarded on campus.

Since this was not a cause and effect study, the effect of the ODSS office interventions cannot be statistically measured. However, the culture for SWDs on this campus, as facilitated by the ODSS office, provides for student success as defined by retention and persistence to graduation (Chickering & Reisser, 1993). Students with disabilities can be as successful (as defined by persistence to graduation) as students without disabilities because of interventions by ODSS. Beginning before the student is admitted to the university, students are made aware of the office, services, and accommodations it provides. Brochures, Web sites, and other promotional information typically include mention of disability or pictures of students with disabilities on campus. All admitted students receive a "Self-Disclosure for Disability" form, an outreach to all students to inform them of the existence of the ODSS and accommodations available on campus. Students desiring further information are encouraged to fill out the form and return it to ODSS. Upon receipt of the self-disclosure form, ODSS sends information about the office and a verification of disability form to the student. This form must be completed by an appropriate licensed professional and returned to ODSS. The office follows up with students who need accommodations (e.g., accommodated housing, sign language interpreters, note-takers, and textbooks in an alternate format) and makes the necessary arrangements before the fall semester begins.

All incoming students with disabilities are invited to attend an orientation session held after they move to campus. Four sessions are offered: one each for the three major groups of SWADs (mobility, hearing, and visual impairments), and one for SWNDs. At these sessions, staff from ODSS and various campus offices explain the range of services offered and how to access these services. Students are also encouraged to schedule a time to meet with ODSS staff to discuss accommodations specific to them. Though ODSS strongly encourages students to attend these sessions and a subsequent meeting, ODSS recognizes that some students, for various reasons, may not want to utilize any disability services or accommodations.

Students requesting academic accommodations (e.g., extended time for examinations or an alternate testing location) provide each of their instructors with a letter from ODSS that verifies the disability, lists the appropriate accommodations, and explains procedures for implementing these accommodations. Students are encouraged to meet with professors early in the semester to discuss the listed accommodations. Hossler (1996) indicated that persistence to graduation was the responsibility of offices and staff across university divisions.

ODSS also makes arrangements for services such as note-takers, sign language interpreters, and readers or books on tape or CD for students with disabilities. These are examples of how institutional obstacles and barriers have been successfully minimized, positively impacting the campus culture for students with disabilities (Nutter & Ringgenberg, 1993).

ODSS is also highly involved in faculty and staff training regarding disability issues on campus. Each year, ODSS presents information regarding the institution's history of providing access for students with disabilities and about policies and procedures for accommodating students with disabilities. This information is presented yearly to new faculty, teaching assistants, and various campus departments. As a result of these multiple efforts, many faculty and staff on campus are open to SWDs and the needs they may have in order to achieve similar persistence to graduation rates of SWQDs.

Many students with disabilities become actively engaged in campus life in a variety of ways, thus helping with the transition between high school and college and incorporation into the life of the college as suggested by Tinto (1993). There is a recognized (and funded) student group for students with disabilities. This group offers activities and programming to enhance disability awareness on campus. With more than 300 student groups available on campus, students with all types of disabilities often become involved in one or more of these groups. If needed, accommodations are provided to enhance students with disabilities' opportunities to participate in extra curricular activities. These occurrences confirm Belch's (2004) conclusion that identified belonging, involvement, purpose, and self-determination as factors affecting retention and graduation for students with disabilities.

Recommendations and Limitations

Replicating this study at other institutions would allow for the data to be compared to see if any common themes occurred. Subsequent studies could provide an expanded understanding on the retention and graduation rates of students with disabilities.

Most students, who use services provided by an ODSS, send documentation and have their disabilities verified by the official statistics day. However, students may disclose a disability to ODSS at any time. Some students do not have their disability verified until after the official statistics day; those students were not included in this study. Subsequent studies should look at students who were verified to have disabilities and became eligible for reasonable accommodations, but who delayed doing so until later in their undergraduate experience. These students did not take advantage of available services as early as possible. Does this delay impact the retention and graduation rates?

Staff serving in disability support services should seek the assistance of professional staff that is provided by the university to assist with data collection and statistical analyses. By using these available resources, gathering data on characteristics of students with disabilities may become more achievable.

As is the case of any single-site study, readers should be cautious about generalizing findings of this study to other colleges or universities. This study was limited in that participants were only from one midsize, public, doctoral-granting university in the Midwest. This study provides a model for analyzing the retention and graduation rates of students with disabilities at one institution; however, one should not conclude that the findings from this study necessarily would apply to other colleges or universities.

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