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Academic Performance of Students with Disabilities in Higher Education: Insights from a Study of One Catholic College

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The purpose of this study was to determine if students with disabilities perform comparably to students without disabilities academically at a small Catholic liberal arts college. Quantitative results were gathered through the comparison of end of semester and cumulative grade point averages for students with disabilities and students without disabilities (n=56). The t test for independent means and a 2-way analysis of variance were used to test hypotheses. Students without disabilities had significantly higher academic performances than students with disabilities as measured by grade point averages. Female students without disabilities outperformed female students with disabilities as measured by end-of-semester and cumulative grade point averages. However, male students without disabilities did not outperform male students with disabilities. Further research should evaluate why females with disabilities seem to fare worse when compared to female students in the comparison group and why male students did not demonstrate the same pattern.

Keywords: academic performance, students with disabilities, postsecondary education

In the current US economy, academic success in postsecondary education is important for all high school graduates. Much has been written about higher education and the opportunity for meaningful employment and financial stability for students with and without disabilities (Levine & Nourse, 1998; Madaus, 2006; Wagner, Newman, Cameto, Garza, & Levine, 2005; Zafft, Hart, & Zimbrich, 2004). Furthermore, it is well documented that students with disabilities continue to be a growing demographic group on college and university campuses nationwide (Adams & Proctor, 2010; Hall & Belch, 2000; Sanford et al, 2011; Sheridan & Ammirati, 1991; Stodden & Conway, 2003). According to Hurst and Smerdon (2000), 63% of all high school graduates with disabilities enrolled in postsecondary education. Students with disabilities, regardless of the specific disability, benefit from higher education degrees, but may face greater obstacles than students without disabilities (Wagner et

al. 2005). Approximately half of the students with disabilities who matriculate into a degree program withdraw before completing their program (American Youth Policy Forum and Center on Education Policy, 2002). Comparatively, the National Center for Education Statistics (2010) indicated that one-third of students without disabilities withdraw before commencement. This discrepancy in academic success between students with and without disabilities requires further examination. For Catholic colleges and universities, addressing the academic needs of all learners is an integral part of the school's mission as a Catholic institution of higher education (Carlson, 2014; Scanlan, 2009).

Academic Performance

Research findings conflict as to whether students with disabilities display equivalent academic performance to those without disabilities (Jorgensen et al., 2005). Witte, Philips, and Kakela (1998) found that students with learning disabilities (LD) at Miami University, a liberal arts institution in Ohio, graduated with grade point averages (GPAs) significantly below the comparison group of students without disabilities. They also found that these students with LD, on average, took one semester longer to graduate. However, in a similar study, Sparks, Javorsky, and Philips (2004) found that 68 college students with ADHD at a medium-sized university were competitive academically with their peer group and graduated with similar GPAs compared to the typical graduating senior at the same university. Over a 5-year period, all of the 68 students, with and without disabilities, had graduated from the university. Conversely, Sachs and Schreuer (2011) compared academic success as measured by GPAs and participation in higher education of 170 students with disabilities and 156 students without disabilities throughout Israel. Their results indicated that students with disabilities had similar college experiences from social and athletic experiences to academic experiences. Furthermore, the academic achievements, as indicated by grade point averages, of students with disabilities were similar to those of students without disabilities (Sachs & Schreuer, 2011).

More nuanced findings suggest that while the outcomes may be similar, rigor of programs may differ for students. For example, in Canada, Jorgensen et al. (2005) conducted a longitudinal study comparing GPAs of more than 40,000 students with and without disabilities. The results indicated statistically insignificant difference in GPA but the rigor of college plan of studies and choices in course loads differed such that students with disabilities had lighter course loads and took longer to complete their studies (Jorgensen

et al., 2005; Lichtenberger, 2010). Both Jorgensen (2005) and Lichtenberger (2010) pointed to the possibility that differences in GPAs may be skewed due to fewer courses taken at a time. The outcomes of these studies suggest that there are unclear academic performance outcomes for students with disabilities.

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADA-AA) (2008), established that qualified students with disabilities are entitled to equal access to postsecondary education. Once qualified and approved for support services, students may request reasonable academic accommodations (McGuire, 2000). Ideally, accommodations should provide students with equal access and nondiscrimination, thus removing barriers to the postsecondary school environment (National Joint Committee on LD, 1999).

Certainly access to accommodations is a critical component to academic success in college (Strasburger, Turner, & Walls, 1999; Adams & Proctor, 2010). Because the burden of responsibility to seek out accommodations falls to the student with disabilities, it is critical that they possess strong self-advocacy skills. Catholic institutions of higher education are not only legally obligated to meet the needs of students with disabilities but morally as well. Catholic social teaching compels educators to eliminate barriers that marginalize individuals from succeeding in education (Carlson, 2014; Scanlan, 2009).

Success in higher education may be dependent on variables such as self-advocacy. Lehmann, Davies, and Laurin (2000) interviewed 35 students with varying disabilities from 2-year and 4-year institutions. The students identified four barriers to academic success they had experienced during their educational careers. These barriers included a lack of understanding and acceptance by others, lack of adequate services, the need for financial services, and the need for self-advocacy skills. Students reported to the researchers that they were not able to communicate their abilities and inabilities. Lehmann et al. (2000) summarized that students with disabilities associated the ability to self-advocate with an increased self-understanding and improved self-esteem.

Related skills such as self-awareness and self-advocacy contribute to personal and academic success in postsecondary education. Specifically, students with disabilities who have an awareness and acceptance of their disability are more likely to be accepted by others and have a greater sense of belonging (Smith & Nelson, 1993). Furthermore, students with an awareness of their academic strengths and weaknesses are in a position to advocate on their own behalf (Skinner & Lindstrom, 2003). Self-advocacy is defined as the ability to speak up for oneself (Milsom & Hartley, 2005). An individual with disabili-

ties who is a competent self-advocate knows his or her rights and responsibilities, articulates a problem, and works collaboratively with the appropriate persons to solve the problem. A self-advocate in higher education is an active participant in his or her education.

This study is grounded in the assumption that higher education institutions are making all reasonable efforts to comply with ADA-AA and as such, if accommodations were in place, students would perform as well as students without disabilities. At the Catholic college where this study took place, students with disabilities had access to academic support and accommodations. Accommodations offered on campus included the use of recording devices during lectures, audio textbooks, peer note takers, extended time to complete tests, and test taking outside the classroom. In addition, all students, with and without disabilities, had access to the Academic Resources Center. The Academic Resources Center provided peer writing and study tutors and offered a noncredit time management course to all students.

This study examines the academic performance of students with disabilities compared to students without identified disabilities regardless of the type of disability at a small, private college. There is one research question addressed in the study: Do students with disabilities perform equally as well as students without identified disabilities academically?

Method

Participants

The college for this study was a small, Catholic four-year liberal arts college. Approximately 60 students college-wide were reported by the Disabilities Coordinator (DC) as having a documented disability. The sample for this study included those representing students formally identified with disabilities and those representing students without identified disabilities.

The disability coordinator verified that the participants had a documented disability through the designated college procedures and had accessed accommodations. A total of 56 students, 25 females and 31 males, both disclosed a disability and accessed accommodations through the college. The disability coordinator reported the following disabilities but percentage of each disability was not reported: learning disabilities, health-related or medical condition, and emotional disabilities. One student was legally blind (a visual disability). In addition, some participants were reported as having more than one of the conditions previously listed occurring simultaneously such as a learning disability and attention deficit disorder or a learning disability

and an emotional disability. Specific accommodations accessed included the use of recording devices during lectures, audio textbooks, peer note takers, extended time to complete tests, and test taking outside the classroom. The control group was comprised of 56 students without disabilities, 25 females and 31 males. All participants were undergraduate students between the ages of 18 and 21. Students with and without disabilities matched in the number of courses taken and the rigor of their plan of study.

Procedures

An ex post facto design was used to compare the grade point averages of students with disabilities and comparable sample of those without disabilities. The students with disabilities were matched to randomly selected students of same gender, with the same major, and the same number of courses completed. The comparison sample matched as closely as possible to the target student group. Group 1 (students with disabilities) was comprised of 25 females and 31 males for each of 18 different majors. Group 2 (students without disabilities) was comprised of 25 females and 31 males for each of 18 different majors as shown in Table 1. Students with and students without disabilities had similar number of courses and rigorous plan of study.

Because this study focused on degree of equity between groups in terms of GPA, the null hypothesis was that these groups would show no statistically significant differences in academic outcomes. The research hypothesis was that there would be no significant difference in GPAs (cumulative and end-of-semester) between students with disabilities and students without disabilities. Students with disabilities and students without disabilities would have equivalent achievement; that is, in fact, a null hypothesis of no significant difference between students with disabilities and students without disabilities (Glass & Hopkins, 1996; Isaac & Michael, 1997). The ideal finding would be that the two groups have equivalent GPA.

Quantitative data, GPA scores of sample participants, were gathered through archival records. Data were presented to the researcher blind without identifying information because of the ethical requirements outlined in the Family Educational Rights and Privacy Act (1997) and the Institutional Review Board (IRB) guidelines. Inferential statistics including t-test and ANOVA were used to test the null hypothesis.

Table 1

Majors for Students With Disabilities and Comparison Group

Major	Students with disabilities	Comparison group
Nursing	9	9
Business	8	8
Psychology	5	5
Sociology	5	5
Criminal justice	6	6
English	4	4
Undecided	4	4
Theology	4	4
Politics	3	3
History	2	2
Math	1	1
Chemistry	1	1
Philosophy	1	1
Classics	1	1
Economics	1	1
Finance	1	1
Fine Arts	1	1
Biology	1	1

Information derived from the students' academic record included the number of courses taken, gender, major, semester GPA, and cumulative GPA for each student identified with a disability. Once these data on the 56 students with disability were received, a match sample was drawn from the same college's student body which demonstrated similar academic backgrounds to the students with disability. For example, if there were five female juniors with English majors in the set of students with disabilities, then the comparison group included five female juniors with English majors who were not identified with disabilities. Again, there was no individual identifying information on these records. An important methodological step was to match students closely with other students who were experiencing a similar academic program to address the findings as stated in the literature.

In order to determine if there was a significant difference between GPAs of students with disabilities and those who do not report a disability, end-of-semester grade point averages were compared between these two groups. The GPAs were collected and organized into two groups: those representing students identified with disabilities and those representing students with-

out identified disabilities. The statistical test used was the parametric test known as the *t* test for independent sample means (Isaac & Michael, 1997). The independent variable for the study was the disability status of students (with and without). The dependent variable for this study was the academic achievement as measured by the GPAs. Potential confounders such as gender, major, and number of courses taken were also examined. The purpose was to examine if students with disabilities in similar academic programs preformed similarly in terms of GPA to those students without disabilities, and to add to the research conversation, described above, about the impact of disability status on student academic performance.

Data Analysis

The research hypothesis assumed equivalent academic achievement between these two subgroups. The hypothesis included two measures of achievement: cumulative and end-of-semester GPAs. The *t* test was used to compare two separate groups. Two ANOVAs were conducted to test the two null hypotheses (one for each measure of achievement). A two-way factorial ANOVA was used to study the effects of two independent variables separately (gender and disability) and together (their interaction effect) for each measure of achievement (Vogt, 1999).

Three additional null hypotheses addressed the possible confounding effects of gender, major, and number of courses completed. The first two additional null hypotheses addressed the equivalence of the two groups in terms of gender and major. These nominal variables were tested with chi-square. The third possible confounding variable, number of courses taken, was tested through ANOVA.

Results

Individual Variables

The quantitative data collected using an ex post facto design was analyzed using the SPSS software for reliability, the *t* test for independent means, chi-square, and a two-way ANOVA. The groups were selected to be identical. Chi-square was used with the nominal variable of gender and major to establish the equivalence of the two groups. Chi-square was zero with a *p* value of 1. There was zero probability these two groups differed on gender and major.

The equivalence of the two groups in terms of number of courses was tested via a *t* test. As planned, there was no significant difference in the num-

ber of courses between the two groups. The following null hypotheses were accepted: that there was no significant difference between the two groups on their majors, gender and the number of courses completed by the members of the two groups. Therefore, these findings indicate that there was no significant difference between the two groups in gender, major and number of courses.

Outcomes of Academic Achievement between Groups

The statistical test used to test the null hypotheses, regarding academic achievement, was the parametric test known as the *t* test for independent sample means. The *t* test for independent samples was selected to determine if there was a difference between the mean values of the two groups of students (with and without disabilities). The level of significance was set conventionally at $p < 0.05$. The dependent variable (academic achievement as measured by GPAs) was measured at an interval level, the distribution of the dependent variable in the population involved approached a normal curve distribution, and the population variances of the populations were similar.

The two null hypotheses tested were that there was no significant difference in end-of-semester GPAs between students with disabilities and students without disabilities and that there was no significant difference in cumulative GPAs between students with disabilities and students without disabilities. The results of the *t* test statistical analyses are reported in Table 2.

Table 2

Results of t Test of Individual Variables (N=56)

Group	<i>M</i>	<i>SD</i>	<i>SE</i>	<i>t</i>	<i>p</i>
No. of courses completed					
1	22.57	10.983	1.468	.113	.91
2	22.34	10.783	1.440	--	--
Semester grade point average					
1	2.28	.489	.065	-3.574	.001*
2	2.60	.461	.062	--	--
Cumulative grade point average					
1	2.23	.463	.062	-2.944	.004**
2	2.48	.462	.062	--	--

Note. * = $p < .001$; ** = $p < .01$

There was a statistically significant difference between the groups at the 0.001 level of significance. There was only 1 chance in 1,000 that this was a random result, and, therefore, the null hypothesis was rejected. The *t* statistic for cumulative GPAs was -2.944 with a *p* value of 0.004. There was a significant difference between the two groups at the 0.001 level of significance. Again, there was only 1 chance in 1,000 that this was a random result, and, therefore, the null hypothesis was rejected. The findings indicate that the two groups were significantly different on end-of-semester and cumulative GPA measures.

Outcomes of Academic Achievement between Groups and Gender

A 2 x 2 factorial ANOVA was used to study the effects of two independent variables (disability and gender) separately and together (their interaction effect). By calculating the mean square error within groups and the mean square error between groups, the *F* ratio can be computed to determine if there is a significant variance between the specified groups. The findings of the two-way ANOVA for the dependent variable, cumulative GPAs, are shown in Table 3.

Table 3

ANOVA Summary Table Cumulative Grade Point Averages

Source	SS	df	MS	F	p
Group	2.128	1	2.128	11.073	.001*
Gender	1.778	1	1.778	9.256	.003*
Interaction	.972	1	.972	5.060	.027**

Note. * = $p < .001$; ** = $p < .01$

The findings of the two-way ANOVA for dependent variable, end-of-semester GPAs are shown in Table 4. The ANOVA were followed up by a post hoc *t* test to determine which means were different. When female students with disabilities were compared to female students without disabilities, there was a highly significant difference between female students in end-of-semester GPAs and cumulative GPAs. These statistical findings suggests that females with disabilities differed from the students without disabilities subgroup in both end-of-semester and cumulative GPA.

Table 4

ANOVA Summary Table End- of-Semester Grade Point Averages

Source	SS	df	MS	F	p
Group	3.204	1	2.128	14.899	.000*
Gender	.755	1	1.778	3.511	.064
Interaction	.881	1	.972	4.098	.045

Note. * = $p < .01$

Female students without disabilities exceeded their peers with disabilities as measured by end-of-semester and cumulative GPAs as shown in Table 5. The statistics indicated a significant difference between female students with disabilities and female students without disabilities.

Male students without disabilities did not outperform male students with disabilities as measured by end-of-semester and cumulative GPAs. When male students with disabilities were compared to their peers without disabilities, there was no significant difference in end of semester and cumulative GPAs as shown in Table 5.

Table 5

Results of Post Hoc t Test for Individual Variables, Females and Males

Group	M	SD	t	p
Female end-of-semester grade point average				
1	2.27332	.458	-4.120	.000
2	2.79200	.432	--	--
Female cumulative grade point average				
1	2.26332	.417	-3.887	.000
2	2.72800	.428	--	--
Male end-of-semester grade point average				
1	2.29000	.520	-1.332	.188
2	2.45000	.432	--	--
Male cumulative grade point average				
1	2.20000	.501	-.785	.436
2	2.29000	.393	--	--

Note. No. of females = 25; No. of males = 31

The statistics indicated that the end-of-semester GPAs approached significance, but there was no significant difference between male students with disabilities and male students without disabilities. This statistical finding suggests that males with disabilities do not differ from the students without disabilities subgroup in end-of-semester and cumulative GPA.

Findings and Recommendations

This study examined the academic performance of students with disabilities controlling for students without disabilities and regardless of the type of disability at a small, private, Catholic college. The research question was whether or not students with disabilities perform equally as well as students without disabilities academically. In the literature, there are conflicting results as to whether students with disabilities have equivalent academic performance to those without disabilities. At this college, the findings in this study indicate that there is a significant difference in academic performance between these two groups as measured by GPA. This study, therefore, replicates the findings of Witte et al. (1998).

A deeper dive into which variables impacted academic performance revealed a significant interaction effect between gender and disability status. Females without disabilities performed significantly better than females with disabilities. There was not a significant difference between males with disabilities and males without disabilities. This gendered finding at this college was not a finding reported in previous studies of this type on disability status and GPA.

The legal mandates and services provided in secondary education are significantly different than those provided in postsecondary education for students with disabilities. The Individuals with Disabilities Education Act (1997) is the federal law that directs school districts to provide a free, appropriate public education to all learners regardless of disability and cost until the individual receives a diploma or turns 21. Special education services are an entitlement in elementary and secondary education. In higher education, civil rights legislation allows access and ensures the removal of barriers to education. According to Madaus and Shaw (2004), Section 504 and the Americans with Disabilities Act are “not prescriptive special education laws . . . and result in varying services” (p. 85) in postsecondary education. Unlike elementary and secondary schools, IHE are not legally required to create an educational program to meet individual needs (Scott, McGuire, & Shaw 2003). Therefore, success in postsecondary education for a student with a disability may

be dependent on accommodations and services available at the Institution of Higher Education (IHE).

The key finding of this study raises the question if there is a relationship between gender and the findings. Typically males are identified with educational disabilities at a higher rate. However, females generally perform better in school. Further research will need to explore the relationship between gender and academic performance for students with disabilities in higher education.

Men and women may differ in their ability to advocate on their own behalf. Self-concept is impacted by both gender and disability (Olney & Brockelman, 2005). In their study, Olney and Brockelman (2005) found that differences in men and women in their self-perceptions and perceptions of support. Specifically, they found that “men and women with disabilities have different needs” (Olney & Brockelman, 2005, p.88). In order to self-advocate, a student with disabilities should be aware of his or her learning needs and appropriate accommodations (Beale, 2005; Skinner & Lindstrom, 2003). Perhaps, as suggested in the preceding literature, female students with disabilities at the target institution may not exhibit the level of self-advocacy needed to be successful.

Studies have reported that all youth, regardless of disability, culture and gender differences benefit from self-advocacy skills in transition to employment or postsecondary education (Beale, 2005; Skinner & Lindstrom, 2003; Trainor, 2007). Women with disabilities at this target institution, in this sample, possibly lack a match in accommodations and/or the degree of self-advocacy skills needed to be successful at this target institution.

Findings suggest that transition coordinators in secondary education and disability coordinators in higher education, particularly those at institutions in similar size and mission to the target college, implement the following:

1. Evaluate the degree to which students with disabilities are aware of their academic strengths and weaknesses in order to advocate for themselves.
2. Evaluate the degree to which males and females are able to self-advocate including the ability to be proactive.
3. Provide education to peers, faculty and staff on disability related issues such as the use of accommodations, advocacy, etc.
4. Educate students with disabilities in regard to differences in laws that apply to secondary versus postsecondary education.

Conclusion

The findings in this study suggest an equity problem between females with disabilities and females without identified disabilities at the target institution. In this study, females with disabilities, but not males with disabilities, demonstrated significantly lower GPAs than did their same-gendered peers. It is not clear what precipitated for the identified differences. Further examination is needed to identify whether these findings are replicated at other institutions. If so, these results can be used to inform transition and curriculum planning for males and females with disabilities.

Completion of a college education increases employment opportunities in adulthood. All students exhibit individual academic and personal strengths, weaknesses and academic needs on the college campus, including students with disabilities. College campuses are seeing increased numbers of students with disabilities. In order for students with disabilities to be successful in postsecondary education, consideration must be given to accommodations available; personal characteristics such as self-advocacy skills; and the role gender plays in executing personal skills. Catholic institutions of higher education, in particular, are called to meet the needs of students with disabilities based on their mission and Catholic Social Teaching. It is believed to be their moral and legal obligation to provide services to meet the needs of students with disabilities.

Limitations of the study include the size and culture of the target institution. The target institution was a small private Catholic four-year college. Accommodations and services may vary, depending upon size and type of institution. Resources and the array of accommodations and services for students with disabilities may be greater at medium and larger universities. Additionally, the researcher did not take into account background variables of the participants such as racial, ethnicity and educational background. Furthermore, the researcher was unable to verify that the comparison group (students without identified disabilities) did not, in fact, have a disability. They may have had a disability but chosen not to disclose this to the Disability Services office or may have been identified at some point in their educational career.

Based on the conclusions and implications drawn from the study, it is recommended that further quantitative and qualitative research be conducted to determine the nature of the academic differences between females with disabilities and females without disabilities as well as males with and without disabilities. Further exploration may clarify the reasons for the disparity in

academic performance between females with disabilities and females without disabilities.

In addition, a quantitative study may determine the correlation of gender differences in self-advocacy skills, and the impact on academic performance. Further exploration may determine if there is a correlation between the degree of self-advocacy and the difference in academic performance between females with disabilities and females without disabilities as well as males with and without disabilities.

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