

Effects of Study Abroad Participation on Student Graduation Rates: A Study of Three Incoming Freshman Cohorts at the University of Minnesota, Twin Cities

Jodi Malmgren, University of Minnesota, Twin Cities

James Galvin, University of California, San Diego

Study abroad participation is increasing. National and institutional resources are being devoted to internationalization. Assessments stress the importance of learning outcomes among study abroad participants. The confluence of these influences led the University of Minnesota, Twin Cities, to gather data on graduation rates of study abroad participants and compare them to those of non-participants. We analyzed the data and the patterns that emerge among subsets of the students by college of enrollment and for students of color. The data suggest that study abroad participation may not harm graduation rates and that it is highly correlated with high graduation rates among under-prepared and at-risk undergraduates as well as students of color. We highlight the implications of the study for academic advisors.

KEY WORDS: advising-as-teaching, at-risk students, developmental advising, retention, students of color

Relative Emphasis: practice, research, theory

Educational Outcomes of Study Abroad

Internationalization

In 2001, the American Council on Education found that 75% of the public, with broad representation across gender and education levels, believe that college students should study abroad. High school students intend to fulfill those expectations; 48% of surveyed college-bound seniors wanted to study abroad and another 28% planned an internship abroad (Hayward & Siaya, 2001, pp. 21–25). While actual participation rates fall short of these expectations, study abroad participation and diversity of destination have increased nationally. Between the 1994-95 and the 2004-05 academic years, study abroad participation increased 144% to over 205,000 U.S. students. Nontraditional destinations, such as Argentina (up 53%) and China (up 35% on the heels of a 90% increase the previous year), grew in popularity between 2003-04 and 2004-05. Of the top 20 destinations in 2004-05, only 5 are English speaking and 11 are outside Europe (Institute of International Education, 2006).

Education abroad and its importance gained

U.S. government attention in 2007 with the Senator Paul Simon Study Abroad Foundation Act. If signed into law, the act will leverage institutional and governmental resources to enable more than 1 million students to go abroad annually by the year 2017. It will also increase diversity among both participants and destinations. The act would supplement existing governmental scholarships and funding for language study and help make international study an affordable reality for many more students than currently study overseas.

Assessing Educational Outcomes

National and institutional calls for greater accountability parallel the rise in study abroad participation.

Study abroad is clearly a global educational phenomenon, a “growth industry” in higher education, and contributes to broader internationalization efforts in colleges and universities. In an era of ever-greater accountability and cost-benefit analysis, hard evidence is being demanded to demonstrate that investments in various forms of education, including study abroad, are worthy ones that are realizing their learning objectives. (Paige, Cohen, & Shively, 2004, p. 253)

Outcomes assessments are being conducted by researchers to determine the effects of study abroad on students’ intercultural competence and global awareness (Chieffo & Griffiths, 2004; Medina-Lopez-Portillo, 2004), language proficiency (Engle & Engle 2004; Segalowitz et al., 2004), discipline-specific expectations (Dibasio & Mello, 2004), as well as career goals and outcomes (Orahood, Kruze, & Easley Pearson, 2004). Several of these variables have been researched simultaneously in individual studies (Ingraham & Peterson, 2004; Vande Berg, Balkcum, Scheid, & Whalen, 2004).

Broad-based assessments of student engagement point to positive outcomes of in-depth educational activities (e.g., study abroad or learning communities) on student learning and development. George Kuh, a long-term researcher of student development and engagement, stated, “Among

high quality co-curricular experiences that have powerful positive effects on students and their success are service learning, study abroad, civic engagement, internships, and experiential learning activities” (Kuh, 2006, p. 1). Kuh’s conclusion about the benefits of cocurricular experiences, such as study abroad, is drawn from results of survey instruments such as the *Beginning College Survey of Student Engagement* (BCSSE) and the *National Survey of Student Engagement* (NSSE). Kuh is director of the Indiana University Center for Postsecondary Research, which houses the Center for Survey Research and conducts the annual BCSSE and NSSE surveys. The NSSE is predicated on research of student learning theory that suggests “students who engage more frequently in educationally effective practices get better grades, are more satisfied, and are more likely to persist” (NSSE, 2006, p. 9). The NSSE survey documents and synthesizes educational practices and student engagement on campuses across the United States and Canada and has consistently demonstrated that effective modes of student engagement result in developmental gains, persistence and retention, and positive learning outcomes. One key finding of the 2007 NSSE is as follows: “Students who study abroad report greater gains in intellectual and personal development than their peers who do not have such an experience” (Indiana University, 2007).

D. Jason De Souza, a colleague of Kuh, provided a commentary for academic advisors on the NSSE and the practices of effective schools. In the context of study abroad opportunities, he wrote:

There is considerable evidence that experiencing diversity is associated with many desirable benefits, such as enhancing leadership skills, developing the ability to work with people from different backgrounds, viewing the learning environment positively, and interacting more frequently with peers and faculty members. . . . Advisors can champion the development of such opportunities and make certain their advisees are aware of them. (de Souza, 2005, pp. 3-4)

Graduation Rates

While the NSSE documents the effects of student engagement broadly, little published research has measured the impact of education abroad on student retention or graduation. The University System of Georgia Learning Outcomes of Students Studying Abroad Research Initiative (GLOSSARI)

was initiated in 2000 and continues to research learning outcomes of study abroad participants across multiple institutions of the Georgia system of public colleges and universities. The GLOSSARI project includes a planned phase of research on the impact of study abroad on graduation rates, but data are not yet available (Sutton & Rubin, 2004). At Michigan State University, Ingraham and Peterson (2004, p. 98) found that “Data on time to graduation and number-of-terms-enrolled show that, on average, study abroad participants enroll for more terms before graduating *but* that they take less time to graduate.”

Study Abroad at the University of Minnesota, Twin Cities

University Mission and Student Learning Outcomes

The confluence of influences such as growth in study abroad interest and participation, governmental support, calls for accountability, and assessments of learning outcomes along with the success of a recent grant-funded initiative to integrate study abroad into the curriculum led stakeholders at the University of Minnesota, Twin Cities, to measure the impact of study abroad participation on graduation rates. A demonstrated increase in graduation rates among study abroad participants would show a tangible and desirable outcome of study abroad initiatives.

The University of Minnesota, Twin Cities, is a large, public, doctoral research university. It ranks fifth among U.S. universities (primarily large research universities) in the number of students studying abroad: 1,836 in 2004-05 (Institute of International Education, 2006). The University of Minnesota, Twin Cities, has incorporated internationalization into its educational mission:

The University of Minnesota, Twin Cities has a firm and long-standing commitment to international research, teaching and service. For more than a century, we have enrolled international students and taught foreign languages. Our faculty conduct research and engage with other researchers and institutions around the world. Our students are studying, interning and volunteering abroad in record numbers. All of these experiences and activities assist in our goal of preparing global citizens. (University of Minnesota, Twin Cities, 2006a)

The university is divided into several discipline-based colleges. The student body ranges from at-risk students to high achievers. Four-, 5-, and 6-year graduation rates are lower than at many

peer institutions. The university's investment in education abroad and other internationalization efforts benefits its scholars and prepares its students to be global citizens, but more pragmatic effects are also important.

Study Abroad and Graduation: Facts and Myths

The University of Minnesota, Twin Cities, has recently set more ambitious graduation-rate goals: a 20% increase in 4-, 5-, or 6-year graduation rates for students graduating in 2012 and subsequent years (University of Minnesota, Twin Cities, 2007). To this end, the University of Minnesota, Twin Cities, stopouts and dropouts were interviewed to understand their reasons for not persisting. In a 2001 study, Matross and Huesman found that 66% of stopouts and 52% of dropouts did not participate in any extracurricular activities. Though they drew on the work of Tinto (1993), they did not single out study abroad among the extracurricular activities but highlighted the importance of student involvement beyond the classroom as one of several factors, including hours of employment and student finances, that influence graduation and retention rates.

"Anecdotal evidence suggests the small number [of study abroad participants nationally] stems from concerns about costs, fear of the unknown, *whether study abroad will delay graduation* and what kind of courses students can take" (Stuart, 2007) [emphasis added]. Many study-abroad advising Web sites include myths or FAQs on the effect of study abroad on timely graduation.¹

The myth that study abroad may delay graduation is also apparent in survey data of University of Minnesota, Twin Cities, students and advisors. University of Minnesota, Twin Cities, seniors ($N = 8,728$) surveyed in October 2006 were asked the question "How important is delay in graduation in considering study abroad?" Ninety-three percent ($n = 1,137$) responded that delay in graduation was either somewhat important, very important, or the most important factor, with 40% responding that delay was the most important factor (Williams, Watabe, & Woodruff, 2007a). In February of 2007, faculty members and advisors were surveyed and asked the same question. Ninety-four percent ($n = 191$) of participants ($N = 430$) in a curriculum integration workshop and 96% ($n = 229$) of those not

participating in the workshop ($N = 779$) responded that delay in graduation was somewhat, very, or the most important factor in students' choice to study outside the United States (Williams et al., 2007b). Because of the persistent myth that study abroad delays graduation, evidence to the contrary is helpful in dispelling a concern of many students and parents who are deciding whether study abroad is an appropriate endeavor, especially in a climate of sharply rising tuition rates.

Methods

In the initial study, three cohorts of University of Minnesota, Twin Cities, students were sampled: the 1999, 2000, and 2001 incoming freshmen (excluding transfer students). The populations were divided into participants and nonparticipants in study abroad activities. Participants were defined as students who had studied outside the United States for at least 3 weeks. Four-, 5-, and 6-year graduation rates for the participants and nonparticipants were calculated when the data were collected in 2005. Hence, the 1999 cohort had 4-, 5-, and 6-year graduation rates, the 2000 cohort had just 4- and 5-year rates, and only those who graduated in 4 years were considered in the 2001 class. The percentages reported demonstrate that study abroad participation may not harm graduation rates (University of Minnesota, Twin Cities, 2006c).

We obtained the raw data to conduct chi-square analyses, the appropriate statistical test for two dichotomous variables, in this case, study abroad participants versus nonparticipants and students who graduated versus those who did not graduate. We chose to compare participants and nonparticipants first at the Twin Cities campus level, then across selected colleges. Data were also examined for students of color, whose race was self-reported by students as non-Caucasian in their University of Minnesota, Twin Cities, application for admission.

Analysis of graduation rates between study abroad participants and nonparticipants enrolled in selected colleges of the University of Minnesota, Twin Cities, allowed us to determine if any impact of study abroad on graduation rates was uniform across different disciplines and levels of student preparedness and risk for attrition (as indicated by the competitiveness of admission into a particular col-

¹ See, for example, Penn State Altoona's *10 Myths About Studying Abroad*: www.altoona.psu.edu/studyabroad/myths.htm; University of Illinois at Urbana-Champaign: www.studyabroad.uiuc.edu/index.cfm?FuseAction=Abroad.ViewDocument&File_ID=01034E03737A00777677706976060972157B770B041404077170017572737076750376727A74; Maryville College: www.maryvillecollege.edu/academics/studyabroad/faq.asp; University of Missouri, Columbia: <http://international.missouri.edu/studyabroad/start/faq.shtml>

lege). The five colleges represent a range of students across multiple disciplines and from high achieving to at-risk and underprepared students as indicated by high school rank and test scores. The university is selective. Approximately 20% of applicants matriculate. All students are talented and qualified for success in college.

- The Carlson School of Management selects high achieving students for the study of business-related degrees. Carlson-admitted students are among the best at the University of Minnesota in terms of high school rank and test scores.
- The Institute of Technology (IT) attracts high achievers for the study of engineering and computer science-related degrees.
- The College of Biological Sciences (CBS) enrolls high achievers pursuing degrees related to natural sciences. IT and CBS are professional programs that have traditionally been underrepresented in study abroad participation. The students matriculated into these colleges have (on average) higher high school ranks and test scores than peers in other colleges.
- The College of Liberal Arts (CLA) represents the broadest spectrum of students, ranging from high-achieving honors students to underprepared students, in the social sciences, sciences, arts, and humanities. We chose CLA because it has traditionally had a high rate of study abroad participation and it has the greatest range of students as measured by high school rank and test scores.
- The General College (GC) is comprised of at-risk and underprepared students. GC was subsumed under the College of Education and ceased to exist as of the 2006-07 academic year. The GC did not award degrees. GC students took 1 to 2 years of preparatory or remedial course work and transferred into one of the degree-granting colleges. GC was chosen because its students were underrepresented in study abroad participation and were at the lower end of the range for high school rank, test scores, and graduation rates.
- Other colleges at the University of Minnesota, Twin Cities, including the Colleges of Architecture and Human Ecology (now combined to form the College of Design), the College of Education (recently expanded to include GC students), the Colleges of Natural Resources and of Agriculture, Food and Environmental Sciences (now combined to be

the College of Food, Agricultural and Natural Resource Sciences) were omitted from the study due to the small number of study abroad participants.

Students of color were singled out for analysis because they are underrepresented in study abroad programs nationally and at the University of Minnesota, where an institutional initiative has been generated to increase their participation in study abroad programs. They are also generally seen to be at risk for timely graduation from the University of Minnesota, Twin Cities; in the 1999 cohort of incoming freshmen, 32.1% of all students graduated in 4 years while only 22.2% of students of color graduated within the same period (University of Minnesota, Twin Cities, 2006c).

We looked at the 4-, 5- and 6-year graduation rates of the cohorts. Four-year graduation rates represent the total number of students who took 5 years (or fewer) to graduate, 5-year graduation rates account for the total number who took 5 years (or fewer) to graduate, and 6-year graduation rates are based on those who graduated within 6 years of initial enrollment. Therefore, the number of graduated students and the graduation rate increase in each subsequent year.

We calculated *p* values to determine the statistical significance of the chi-square results (i.e., to show that the relationship between the years to graduate and study abroad participation is not a chance result). The effect size was computed with the phi correlation coefficient for two dichotomous variables. The effect size represents the percentage of variance in graduation rates that can be explained by study abroad participation.

Results

The following results are based on our findings:

- The difference in graduation rates between study abroad participant and nonparticipant groups were statistically significant at the $p \leq .05$ level or better. Participants had overall higher graduation rates. Study abroad participation did not delay graduation among these aggregate cohorts of students.
- Weak phi values (effect sizes) suggest that variance in graduation rates is not highly explained by study abroad. However, this result was expected because study abroad is only one of many factors, such as in-depth educational experiences, economic pressures, or

family responsibilities, that influence graduation rates.²

- Strong correlations were found between study abroad participation and graduation rates among students of color.
- At-risk students, as identified by the college in which they enrolled, who had studied abroad experienced higher graduation rates than their peers who had not studied outside the United States.

Analysis by Campus

First, we analyzed the data for the Twin Cities campus as a whole. As Table 1 summarizes, chi-square analyses determined that differences in graduation rates between University of Minnesota, Twin Cities, students who had studied abroad and those without study abroad experiences were statistically significant. Among all three cohort groups (1999, 2000, and 2001) and across all periods to graduation (4, 5, or 6 years), the graduation rates of the students with study abroad experiences are higher than the graduation rates of the students who did not study abroad.

The effect size was computed with the phi correlation coefficient for two dichotomous variables (study abroad participants vs. nonparticipants and students who graduated vs. those who did not graduate). As reported in Table 1, the effect sizes suggest very weak to weak relationships between the graduation rate and participation in study abroad with an appropriate effect size ranging from 0.096 to 0.239; the variance in graduation rates is not explained by study abroad participation.

The data show a correlation between study abroad participation and graduation rates. While the data do not prove any causal relationship between the two variables, the steep differences in graduation rates between study abroad participants and nonparticipants suggest that study abroad participation may not harm graduation rates.

Next, we analyzed data for students enrolled in five select University of Minnesota, Twin Cities, colleges and for students of color. Breaking down the student population helped us to determine whether the correlation between study abroad participation and higher graduation rates was uniform across the student body represented in these samples or if patterns might emerge.

Table 2 shows summarized chi-square analyses on differences in graduation rates between two

groups: Carlson students with and without study abroad experience. The differences in 4-year graduation rates between the two groups were not statistically significant for the 1999 and 2001 cohorts but were statistically significant in the 2000 cohort. The differences in 5-year graduation rates between the two groups were statistically significant both in the 1999 and 2000 cohorts. The differences in 6-year graduation rate were statistically significant in the 1999 cohort.

The effect size was computed with the phi correlation coefficient for two dichotomous variables. As reported in Table 2, the effect sizes suggest very weak relationships between graduation rates and participation in study abroad programs with an appropriate effect size ranging from 0.035 to 0.193.

Table 3 summarizes chi-square analyses on differences in graduation rates between IT students with and without study abroad experiences. The differences in 4-year graduation rates between the two groups were not statistically significant in the 1999 and 2000 cohorts but were statistically significant in the 2001 cohort. The differences in 5-year graduation rates between the two groups were statistically significant both in the 1999 and 2000 cohorts. The differences in 6-year graduation rates were statistically significant in the 1999 cohort.

The effect size was computed with the phi correlation coefficient for two dichotomous variables. As reported in Table 3, the effect sizes suggest very weak relationships between graduation rates and participation in study abroad with an appropriate effect size ranging from 0.016 to 0.139.

Table 4 summarizes chi-square analyses on differences in graduation rates between CBS students with and without study abroad experiences. The differences in 4-year graduation rates between the two groups were not statistically significant across the three cohorts. The differences in 5-year graduation rates between the two groups were not statistically significant in the 1999 cohort but were found to be statistically significant in the 2000 cohort. The differences in the 6-year graduation rates were statistically significant in the 1999 cohort.

The effect size was computed with the phi correlation coefficient for two dichotomous variables. However, as reported in Table 4, the effect sizes suggest very weak relationships between the graduation rate and participation in study abroad with an appropriate effect size ranging from 0.004 to 0.195.

Chi-square analyses reported in Table 5 demon-

² A phi value of .3, squared to .09, represents that 9% of the variance can be explained by study abroad participation. Our phi values are all lower than .3. A weaker effect size does not diminish the statistical significance of the different graduation rates of study abroad participants versus nonparticipants.

Table 1 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at the University of Minnesota, Twin Cities

1999 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 498)	Students without SA who obtained degree (<i>n</i> = 4,527)	χ^2 (<i>df</i> = 1) (<i>N</i> = 5,025)	Phi
4	227(45.6%)	1,368(30.6%)	46.105***	0.096
5	424(85.1%)	2,400(53.0%)	188.099***	0.193
6	452(90.8%)	2,606(57.6%)	207.558***	0.203
2000 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 607)	Students without SA who obtained degree (<i>n</i> = 4,258)	χ^2 (<i>df</i> = 1) (<i>N</i> = 4,865)	Phi
4	328(54.0%)	1,251(29.4%)	147.327***	0.174
5	520(85.7%)	2,112(49.6%)	278.298***	0.239
2001 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 649)	Students without SA who obtained degree (<i>n</i> = 4,610)	χ^2 (<i>df</i> = 1) (<i>N</i> = 5,259)	Phi
4	374 (57.6%)	1,428 (31.0%)	179.399***	0.185

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA).

****p* ≤ 0.001.

Table 2 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at the University of Minnesota, Twin Cities, Carlson School of Management.

1999 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 59)	Students without SA who obtained degree (<i>n</i> = 330)	χ^2 (<i>df</i> = 1) (<i>N</i> = 389)	Phi
4	39(66.1%)	233(70.6%)	0.483	0.035
5	58(98.3%)	277(83.9%)	8.640**	0.149
6	59(100%)	280(84.8%)	10.258***	0.162
2000 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 58)	Students without SA who obtained degree (<i>n</i> = 219)	χ^2 (<i>df</i> = 1) (<i>N</i> = 277)	Phi
4	49(84.5%)	147(67.1%)	6.679**	0.155
5	57(98.3%)	178(81.3%)	10.299***	0.193
2001 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 75)	Students without SA who obtained degree (<i>n</i> = 299)	χ^2 (<i>df</i> = 1) (<i>N</i> = 374)	Phi
4	55(73.3%)	205(68.6%)	0.644	0.042

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA), Carlson School of Management.

p* ≤ 0.01; *p* ≤ 0.001.

Table 3 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at University of Minnesota, Twin Cities, Institute of Technology

1999 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 52)	Students without SA who obtained degree (<i>n</i> = 692)	χ^2 (<i>df</i> = 1) (<i>N</i> = 744)	Phi
4	18(34.6%)	261(37.7%)	0.198	-0.016
5	44(84.6%)	466(67.3%)	6.694**	0.095
6	50(96.2%)	500(72.3%)	14.332***	0.139
2000 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 71)	Students without SA who obtained degree (<i>n</i> = 675)	χ^2 (<i>df</i> = 1) (<i>N</i> = 746)	Phi
4	26(36.6%)	205(30.4%)	1.174	0.040
5	58(81.7%)	428(63.4%)	9.457**	0.113
2001 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 81)	Students without SA who obtained degree (<i>n</i> = 757)	χ^2 (<i>df</i> = 1) (<i>N</i> = 838)	Phi
4	41(50.6%)	251(33.2%)	9.825**	0.108

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA), Institute of Technology.

** $p \leq 0.01$; *** $p \leq 0.001$.

Table 4 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at University of Minnesota, Twin Cities, College of Biological Sciences

1999 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 25)	Students without SA who obtained degree (<i>n</i> = 191)	χ^2 (<i>df</i> = 1) (<i>N</i> = 216)	Phi
4	11(44.0%)	83(43.5%)	0.003	0.004
5	20(80.0%)	126(66.0%)	1.987	0.096
6	24(96.0%)	131(68.6%)	8.198**	0.195
2000 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 31)	Students without SA who obtained degree (<i>n</i> = 207)	χ^2 (<i>df</i> = 1) (<i>N</i> = 238)	Phi
4	12(38.7%)	84(40.6%)	0.039	-0.013
5	27(87.1%)	125(60.4%)	8.335**	0.187
2001 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 22)	Students without SA who obtained degree (<i>n</i> = 248)	χ^2 (<i>df</i> = 1) (<i>N</i> = 270)	Phi
4	8(36.4%)	105(42.3%)	0.296	-0.033

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA), College of Biological Sciences.

** $p \leq 0.01$.

strate that differences in 4-, 5-, and 6-year graduation rates between CLA students with and without study abroad experiences were statistically significant. Among all three cohort groups (1999, 2000, and 2001), the graduation rates of the students with study abroad experience are higher than those of the students without study abroad experience who graduated within the various periods (4, 5, or 6 years).

The effect size was computed with the phi correlation coefficient for two dichotomous variables. As reported in Table 5, the effect sizes suggest very weak to weak relationships between the graduation rate and participation in study abroad with an appropriate effect size ranging from 0.133 to 0.255.

Table 6 summarizes chi-square analyses of GC students with and without study abroad experiences. Except for the 4-year graduation rate of the 1999 cohort, graduation rate differences were found to be statistically significant by year to completion. Among all three cohort groups, the graduation rates of the students with study abroad experience are higher than the rate of the students without study abroad experiences across the different times to graduation (4, 5, or 6 years). The exception to this trend can be seen among the few ($n = 7$) who grad-

uated within 4 years.

The effect size was computed with the phi correlation coefficient for two dichotomous variables. Table 6 effect sizes suggest very weak to weak relationships between the graduation rate and participation in study abroad programs with an appropriate effect size ranging from 0.045 to 0.228.

The CLA and GC data reported in Tables 5 and 6 show stronger correlations of study abroad participation with higher graduation rates than the other colleges reported in Tables 1 through 4. Only the 4-year graduation rate of the 1999 GC cohort (for which there were only 8 study abroad participants) did not show statistical significance. The correlations are stronger among this broader range of students than among students enrolled in the more selective colleges.

The data for GC are especially interesting because the numbers of 4-year graduates for all 3 years is quite low (as would be expected among students who need 1 to 2 years of preparatory course work before enrolling in a degree-granting college), and yet we found statistical significance among all but one cohort year. The 5- and 6-year graduation rates of study abroad participants (ranging from 70.8 to 81.3%) were staggering in comparison to those of nonparticipants (24.3 to 34.1%).

Table 5 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at University of Minnesota, Twin Cities, College of Liberal Arts

1999 Cohort				
Years to graduate	Students with SA who obtained degree ($n = 291$)	Students without SA who obtained degree ($n = 2,255$)	χ^2 ($df = 1$) ($N = 2,546$)	Phi
4	144(49.5%)	675(29.9%)	45.150***	0.133
5	246(84.5%)	1,181(52.4%)	108.236***	0.206
6	260(89.3%)	1,285(57.0%)	113.142***	0.211
2000 Cohort				
Years to graduate	Students with SA who obtained degree ($n = 366$)	Students without SA who obtained degree ($n = 2,029$)	χ^2 ($df = 1$) ($N = 2,395$)	Phi
4	206(56.3%)	665(32.8%)	74.054***	0.176
5	314(85.8%)	1,028(50.7%)	155.299***	0.255
2001 Cohort				
Years to graduate	Students with SA who obtained degree ($n = 372$)	Students without SA who obtained degree ($n = 2,150$)	χ^2 ($df = 1$) ($N = 2,522$)	Phi
4	225(60.5%)	703(32.7%)	105.281***	0.204

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA), College of Liberal Arts.

*** $p \leq 0.001$.

Table 6 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at University of Minnesota, Twin Cities, General College

1999 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 48)	Students without SA who obtained degree (<i>n</i> = 824)	χ^2 (<i>df</i> = 1) (<i>N</i> = 872)	Phi
4	7(14.6%)	73(8.9%)	1.784	0.045
5	36(75.0%)	236(28.6%)	45.419***	0.228
6	39(81.3%)	281(34.1%)	43.403***	0.223
2000 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 28)	Students without SA who obtained degree (<i>n</i> = 847)	χ^2 (<i>df</i> = 1) (<i>N</i> = 895)	Phi
4	14(29.2%)	55(6.5%)	32.820***	0.191
5	34(70.8%)	206(24.3%)	50.076***	0.237
2001 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 50)	Students without SA who obtained degree (<i>n</i> = 802)	χ^2 (<i>df</i> = 1) (<i>N</i> = 852)	Phi
4	14(28.0%)	51(6.4%)	31.279***	0.192

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA), General College.

*** $p \leq 0.001$.

Finally, we examined the graduation rates of students of color who studied abroad and those who did not study overseas. The data are reported in Table 7.

As Table 7 summarizes, chi-square analyses determined that differences in the number of graduated students with and without study abroad experience were statistically significant. Among all three cohort groups and across the different lengths of time taken to graduate, a statistically significant higher percentage of students of color with study abroad experience graduated than students of color who had not studied outside of the United States.

The effect size was computed with the phi correlation coefficient for two dichotomous variables. As reported in Table 7, the effect sizes suggest very weak to weak relationships between the number of graduated students and participation in study abroad with an appropriate effect size ranging from 0.113 to 0.225.

The data in Table 7 show that the graduation rates of study abroad participants in these three samples of students of color were consistently higher than for nonparticipants. Students of color who participated in study abroad had anywhere from a 20.3% (4-year rate in the 1999 cohort) to a 40.8% (6-year rate in the 1999 cohort) higher graduation rate than

did nonparticipants. In addition, the very small sample size of the group of students of color decreases the possibility of a chance result. Hence, the correlations (between study abroad participation and higher graduation rates) in the data are powerful because they demonstrate statistical significance at the $p \leq .001$ level.

Discussion

The results are exciting. Even a small increase in graduation rates is significant at the University of Minnesota, Twin Cities, where graduation rates had fallen below those of many peer institutions.

The three most selective admission colleges, Carlson, IT, and CBS, show similar patterns among study abroad participants and nonparticipants; the differences in graduation rates among the three samples were less likely to be statistically significant at the 4- and (for CBS) the 5-year graduation period, but for the group graduating within 6 years, the differences were statistically significant across all three colleges. While the data cannot prove a causal relationship between study abroad participation and high graduation rates, the weaker correlations may suggest that the impact of study abroad is less significant for students at competitive colleges than it is for those graduating in less

Table 7 Correlation data on graduation rates of participants and nonparticipants in study abroad programs by cohort (1999, 2000, 2001) at the University of Minnesota, Twin Cities, students of color

1999 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 46)	Students without SA who obtained degree (<i>n</i> = 816)	χ^2 (<i>df</i> = 1) (<i>N</i> = 816)	Phi
4	19(41.3%)	162(21.0%)	10.328***	0.113
5	35(76.1%)	310(40.3%)	22.831***	0.167
6	39(84.8%)	339(44.0%)	28.998***	0.189
2000 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 77)	Students without SA who obtained degree (<i>n</i> = 776)	χ^2 (<i>df</i> = 1) (<i>N</i> = 853)	Phi
4	33(42.9%)	146(18.8%)	24.421***	0.169
5	58(75.3%)	286(36.9%)	43.077***	0.225
2001 Cohort				
Years to graduate	Students with SA who obtained degree (<i>n</i> = 80)	Students without SA who obtained degree (<i>n</i> = 799)	χ^2 (<i>df</i> = 1) (<i>N</i> = 879)	Phi
4	36(45.0%)	158(19.8%)	26.903***	0.175

Note. Pearson's chi-square value and phi correlation coefficient for years to graduate between study abroad participants (with SA) and nonparticipants (without SA), students of color.

*** $p \leq 0.001$.

competitive colleges.

The benefits of study abroad, from long-range academic and degree planning and in-depth educational engagement, may already accrue to high achieving or honors students, such as those in the competitive colleges at the University of Minnesota, Twin Cities, through other educational influences (e.g., on-campus or community engagement or a meaningful relationship with an academic advisor or faculty mentor) or from their own approach to education.

While the data support the statistical significance of the differences in graduation rates between study abroad participants and nonparticipants across most of the cohort samples in the selected colleges, the effect sizes suggest weak to very weak relationships between graduation rates and participation in study abroad. We speculate that the reason for the weak effect sizes is a result of the various influences (both positive and negative) on graduation rate that may affect students during their college careers, such as economic pressures, work or family demands on time, and the quality of academic advising or other engagement opportunities.

Study abroad is widely believed to be both detrimental to timely graduation and most appropriate for high achieving students (as indicated by the

fact that many institutions and study abroad programs limit study abroad participation to students with a 3.0 GPA or higher), yet the correlations presented in Tables 2 through 6 seem to counter those assumptions. Further research from other institutions would be helpful to clarify whether the patterns at the University of Minnesota, Twin Cities (shown in these samples through statistically significant findings that are likely generalizable to other cohorts of incoming high school graduates matriculating into the University of Minnesota, Twin Cities) are true of other institutions.

The GLOSSARI project includes a planned phase of research on the impact of study abroad on graduation rates (Sutton & Rubin, 2004). Data from that study may provide a helpful context for determining whether the University of Minnesota, Twin Cities, findings are unique or may apply in other institutional settings.

What accounts for the University of Minnesota, Twin Cities, findings? Further research is also needed on other factors that may affect the correlations between study abroad experiences and graduation rates. For example, perhaps study abroad students have higher graduation rates because they are more likely to add an interim or summer enrollment to their course of study. Unlike Ingraham

and Peterson (2004) at the Michigan State University, we did not measure the number of terms of enrollment by students between matriculation and graduation.

By including incoming freshmen in the sample, we may have introduced bias such that positive correlations between study abroad and timely graduation are more likely to be found; students who persist at the University of Minnesota, Twin Cities, until the sophomore, junior, or senior year (the time when most students study abroad) are likely to remain in school until graduation. A follow-up study could compare graduation rates of transfer students with and without study abroad experiences, or researchers could compare cohorts of sophomores who have remained at the university and participated in study abroad versus their classmates who did not study in colleges outside the United States.

The positive correlation between the two variables (study abroad participation and graduation rates) may be due to a third variable, such as motivation, that encourages a student both to study abroad and to persist until graduation. Perhaps the University of Minnesota, Twin Cities, curriculum integration (CI) project, a pilot begun in 1999 and culminating in a 3-year grant-funded initiative to integrate study abroad into the curricula of all majors and minors on campus, enabled more students to study abroad and take course work that would directly apply to their degree requirements. A study to compare the graduation rates of study abroad participants versus nonparticipants in post-CI and pre-CI cohorts would be valuable.

The correlations in this study may not be valid for other University of Minnesota, Twin Cities, cohorts or for other educational institutions. Similar data collection at a variety of institutions across the United States would be helpful in either replicating or contextualizing these findings.

Implications for Academic Advising

Advising and Institutional Mission

The results of this study have implications for academic advising. Educational institutions across the country have embraced internationalization, which is increasingly part of an institution's mission, and resources are devoted to internationalization in many forms, including expanding study abroad. A review of the international information of several institution Web sites, ranging from small private liberal arts colleges (e.g., St. Olaf and Dickinson College) to large public institutions (e.g., University of California, San Diego and the University of Pittsburgh) suggest

that institutions differ in the way they define and operationalize their intent to internationalize and in the extent to which they explicitly call on the expertise of advisors to assist in the effort. For example, does an institution define internationalization as increasing the intercultural competence of their graduates, raising awareness of international issues, recruiting an internationalized faculty, internationalizing on-campus courses, or achieving higher study-abroad participation rates? What is a campus doing to reach its intended objectives? Is it encouraging curriculum integration efforts or implementing an international degree plan or a series of cross-cultural seminars? Is it building alliances between study abroad staff and academic advisors? Is it diversifying study abroad choices?

Institutions rarely mention the importance of close collaboration between academic advisors and study abroad professionals in their mission statements. With rare exceptions do they highlight the availability of study abroad experiences across disciplines. Few study abroad sites have links to advising Web sites or other operational tools to promote referrals and collaboration. This does not mean such practices do not exist, only that they are not explicitly provided on Web sites. Clearly administrators in student services and study abroad can foster closer links between their Web sites, offer opportunities for staff development and training, and improve referrals and services for students.

As a result of the internationalization efforts by their institutions, academic advisors are nevertheless increasingly called upon (either explicitly or implicitly) to be knowledgeable about study abroad and to encourage participation among their advisees as one avenue for internationalizing a campus. How can advisors best assist students to prepare for study abroad so the students are most likely to achieve the desirable outcomes sought by an institution? One possible way is through goal setting.

Encouraging Study Abroad

Kitsantas (2004) began to connect the outcomes literature to purposeful goal setting by students. She hypothesized, and her data support, that students whose goals for study abroad include better cross-cultural understanding or discipline-specific knowledge are more likely to achieve desirable outcomes such as cross-cultural skills and global understanding than students whose primary study-abroad goals are social in nature. This study may be of interest to academic advisors who assist students in preparing for education abroad.

As a primary on-campus contact for students

prior to study abroad, academic advisors can help guide them through purposeful goal setting. One of NACADA's core values is to "help students establish realistic goals and objectives and encourage them to be responsible for their own progress and success" (NACADA, 2004). Such goal setting, in the case of students who wish to study abroad, could encompass meeting degree requirements with excellent grades, learning about their major discipline from an international perspective, or learning cross-cultural skills to serve them in their future career. Where a student's goals are less academically driven, an advisor could reframe the conversation in terms of academic goals. Goal setting and monitoring goal progress while abroad, as well as reentry advising, can assist the student to achieve positive outcomes from study abroad.

Advisors apply a variety of theories when working with students, such as drawing on aspects of developmental and strengths-based advising, as well as advising-as-teaching, to encourage study abroad and relevant goal setting among advisees. An advisor may use student development theory (Gordon, 1994) to help a student consider the personal development and life skills an education abroad experience may bring. An advising-as-teaching philosophy (Lowenstein, 2005) may lead an advisor to emphasize the curricular benefits of study abroad course work and its connection to the student's overall degree plan. An advisor can use strengths-based advising (Schreiner & Anderson, 2005) to remind a student of his or her successful transition to college and ability to adjust to changes. The advisor can use those observations to encourage a student to take a chance on study abroad and use those proven adaptive skills to succeed in another university overseas. The advisor can point out that the advisee can hone those skills of flexibility for future academic and career-related transitions.

Advisors at the University of Minnesota, Twin Cities, use several best practices to promote study abroad. Since the beginning of the CI grant initiative, the following practices may have contributed to the 45.5% increase in study abroad participation rates on the Twin Cities campus from 1,242 students in 2001-02 to 1,808 students in 2004-05 (University of Minnesota, Twin Cities, 2006b). Academic advisors and study abroad professionals closely collaborate with program selection, predeparture planning, course evaluation, and reentry advising. They jointly present informational programs for students, invite study abroad professionals to freshman seminars and career fairs, and create links to the study abroad center from advising Web sites.

Each student contact is an opportunity to discuss study abroad. This begins in orientation and continues in individual appointments, outreach resources such as Web sites, electronic newsletters, and E-mails. Creating a study abroad space in the lobby of each advising center is very helpful. The lobby site may include brochures, study abroad information sheets for each major, referral sheets for study-abroad information sessions, and a world map with locations where students have studied. Of critical importance is incorporating study abroad into long-range graduation maps for students both prior to departure and after reentry (Malmgren & Galvin, 2006). This is one of the most effective tools for keeping students on track for timely graduation.

Comprehensive training and professional development programs are most effective in building partnerships between study abroad professionals and academic advisors with the goal of increasing student participation in study abroad. The CI initiative spawned ongoing workshops, retreats, and international site visits; these opportunities create knowledgeable and dedicated advocates for study abroad across departments, colleges, and campuses. Because of the value of study abroad for students and institutions of higher education, such programs are highly cost-effective.

Academic advisors are uniquely situated to assist a student in study-abroad goal setting. When those goals are academic in nature, whether specific to meeting degree requirements, contextualizing an undergraduate degree within a broader global understanding, or developing skills to succeed in college and in their future career, students may be more likely to persist and move toward graduation upon return from study abroad.

Conclusion

National attention is focused on the value of study abroad. Institutions are embracing internationalization and seeking evidence of concrete learning outcomes among study abroad participants. We analyzed data on graduation rates of study abroad participants versus nonparticipants. Three key findings were as follows:

- The differences in graduation rates between two groups, those with and without study abroad experiences, were statistically significant. Study abroad participants had overall higher graduation rates.
- Study abroad participation did not delay graduation.
- The data regarding students of color and stu-

dents in less competitive colleges in these samples showed stronger correlations between study abroad participation and higher graduation rates than did the data from students in highly competitive programs.

We then considered the implications of the study for academic advisors. Because advisors are increasingly called upon to encourage study abroad participation among their advisees, we highlighted literature on goal setting, in the context of various advising philosophies, as a way advisors can increase the likelihood of positive study-abroad learning outcomes, including retention and graduation.

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