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*Innovations in Research and Scholarship Feature*

# The Effect of Study Abroad on Intercultural Competence Among Undergraduate College Students

Mark H. Salisbury, *Augustana College*

Brian P. An, *University of Iowa*

Ernest T. Pascarella, *University of Iowa*



*International educators have long asserted that study abroad improves students' intercultural competence. However, the evidence is less clear than the rhetoric suggests. Examining longitudinal data from a national study of college students, this study explores the impact of study abroad on intercultural competence while accounting for a host of precollege characteristics, institutional differences, college experiences, and study abroad intent. Results challenge prior assertions and complicate our understanding of the educational impact of study abroad.*

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*Mark H. Salisbury, Assistant Dean of Academic Affairs and Director of Institutional Research and Assessment, Augustana College. Brian P. An, Assistant Professor of Educational Policy and Leadership Studies, University of Iowa. Ernest T. Pascarella, Mary Louise Peterson Professor of Higher Education, University of Iowa.*

*Correspondence concerning this article should be addressed to Salisbury at [msal513@yahoo.com](mailto:msal513@yahoo.com).*

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In the wake of the 9/11/2001 terror attacks, the American Council on Education (ACE, 2002) urgently called on the U.S. government to reverse decades of declining emphasis on international education and substantially increase the number of American students who study abroad. Subsequently, the Association of Public and Land Grant Universities (2004) and the Association of American Colleges and Universities (2007) joined ACE and the federal government (Lincoln Commission, 2005) to push higher education institutions to prioritize study abroad. However, despite an apparent consensus on the educational importance of study abroad, less is known about its influence on intercultural competence than the national rhetoric seems to suggest. Although previous research has typically found that studying abroad improves a host of intercultural attitudes and skills, these findings are limited by at least one of three factors: they are constrained to small samples at a single institution, they do not measure change over time, or they account for few, if any, factors that might also contribute to the identified effect (Pascarella & Terenzini, 2005; Twombly, Salisbury, Tumanut, & Klute, 2012). These limitations leave open the distinct possibility that the alleged impact of study abroad is actually a function of the participants' predeparture characteristics rather than the experience itself.

This study moves beyond previous research to estimate the influence of study abroad participation on intercultural competence with a longitudinal pretest-posttest design while addressing the methodological and analytical weaknesses of prior studies. Using longitudinal data from the Wabash National Study of Liberal Arts Education (WNS), this study accounts for the following variables: precollege characteristics, institutional characteristics, within college experiences, a pretest measure of intercultural competence, and a statistical adjustment for selection bias. These variables are utilized within a theoretically grounded model of college impact to determine the extent to which study abroad participation uniquely affects the development of intercultural competence.

## Literature Review

Over the course of several decades, postsecondary study abroad has evolved from a selective educational endeavor to a national educational priority (Hoffa, 2007; NAFSA 2003). Substantial increases in institutional support for study abroad have helped boost participation (Green, Luu, & Burris, 2008). More recently, federal legislation has been proposed and passed by the U.S. House of Representatives (H.R. 2410, 2009) that allocated over \$100 million toward study abroad scholarships.

The broad support for study abroad participation turns on the longstanding belief that studying abroad improves intercultural competence (NAFSA, 2003; National Task Force on Undergraduate Education Abroad, 1990) and is grounded in the contact hypothesis (Allport, 1954), which argues that interaction between two groups will reduce the prejudicial feelings between individuals within each group. With few exceptions (e.g., Wilkinson, 1998), study abroad research has found that international study improves several dimensions of intercultural competence such

as a more positive view of the host culture (Carlson & Widaman, 1988; Chieffo & Griffiths, 2004), an expanded global perspective or world mindedness (Douglas & Jones-Rikkers, 2001; Pedersen, 2009), and an increase in intercultural awareness and sensitivity (Anderson, Lawton, Rexeisen, & Hubbard, 2006; Williams, 2005).

Taken together, this body of research has contributed important insights and raised valuable questions about the educational influence of international study. Nonetheless, despite the preponderance of supporting evidence, two methodological weaknesses often undercut the validity and generalizability of these findings: (a) an insufficient specification of a conceptual model and (b) an incomplete use of statistical procedures necessary to adjust for the potentially problematic elements of the chosen research design.

A repeated critique of most study abroad research is the lack of a grounded theoretical framework (Black & Mendenhall, 1991; Pascarella & Terenzini, 2005; Sell, 1983). Study abroad research has almost uniformly sought to determine the educational influence of international study immediately upon its conclusion. Although this is understandable given the perpetual challenges of gathering data from students who may or may not be returning directly to campus and the time constraints of study abroad professionals who often conduct these studies, this research design does not comport with the body of research documenting the length of time required to develop nuanced intercultural sensitivity or competence (Bennett & Bennett, 2004; Byram, Nichols, & Stevens, 2001). In addition, it does not account for the potentially detrimental impact of reverse culture shock—the struggles often experienced while re-acclimating to one's home culture after an extended period abroad (Gaw, 2000).

In addition, recent large-scale examinations of study abroad (e.g., Carlson, Burns, Useem, & Yachimovicz, 1990; Sutton & Rubin, 2004; Vande Berg, Connor-Linton, & Paige, 2009) do not control for the array of demographic, attitudinal, or aspirational characteristics that might exist prior to study abroad participation and thereby explain apparent differences between those who do and do not study abroad. A growing, albeit recent, vein of research has begun to identify the degree to which students who study abroad and those who do not differ across a range of predeparture demographic and dispositional factors (Goldstein & Kim, 2006; Institute of International Education, 2009; Salisbury, Umbach, Paulsen, & Pascarella, 2009; Spiering & Erickson, 2006). These findings provide additional evidence of the potential detrimental impact of selection bias in examining the effects of optional yet educationally valuable programs such as study abroad (Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007) and add credence to the suggestion that the selection effect may be a legitimate competing explanation for the previously identified relationship between study abroad and intercultural competence.

The second category of limitations in previous study abroad research involves weaknesses of design and analysis. Many studies examined a relatively small, single-institution sample (e.g., Anderson, Lawton, Rexeisen, & Hubbard, 2006; Chieffo & Griffiths, 2004; Douglas & Jones-Rikker, 2001). As such, these findings are difficult to generalize to the diversity of study abroad programs

and participants. Additionally problematic, most of these studies employed a cross-sectional design in which the only measure of intercultural competence occurred after the study abroad experience. In these cases, without the existence of a pretest it is difficult to assess the value-added effect of study abroad (McClendon, 1994; Groves et al., 2004).

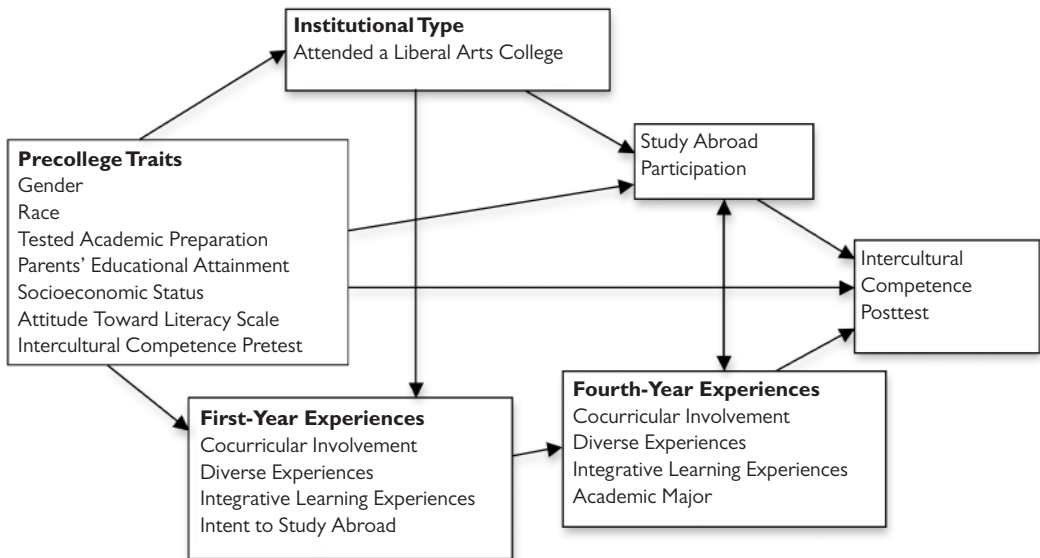
Finally, longitudinal examinations of the effect of study abroad on the development of intercultural competence that gather survey data across a large and diverse sample often require additional statistical procedures to avoid violating the prerequisite assumptions of ordinary least squares (OLS) regression and producing inaccurate findings (McClendon, 1994). One such assumption is that the individuals providing data are randomly selected from the population of interest. Quantitative measurement scholars have demonstrated that when multi-institutional data is gathered randomly *within* each institution instead of randomly *across* all institutions, the data from within each institution is often systematically “clustered” instead of evenly distributed. In statistical parlance, this phenomenon produces a correlation of standard errors or variance that increases the possibility of generating a finding that appears statistically significant even though it is not (Raudenbush & Bryk, 2002). Likewise, measurement scholars have similarly demonstrated the dangers of failing to fully adjust for the “selection effect,” or the possibility that certain individuals within a large-scale study are systematically predisposed to participate in an experience of interest such as study abroad. Statisticians have developed a variety of recommended procedures such as doubly robust estimation, propensity score matching, and instrumental variables to counter the influence of the selection effect (Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007). Among the large-scale studies reviewed above, no evidence could be found that these analyses employed procedures to account for either issue.

## Guiding Conceptual Framework

The guiding framework of this study combines empirically grounded conceptual models of intercultural competence development and college impact research. First, this study applies Allport’s (1954) contact hypothesis, which asserts that interactions between individuals from different cultures reduces prejudice and improves intercultural competence. While repeated testing of this hypothesis has added nuance and complexity (Pettigrew & Tropp, 2006), research has consistently replicated the basic tenets of the contact hypothesis.

Because study abroad functions as a part of the college experience, an appropriate conceptual model to guide this analysis is critical to properly isolate the unique effect of study abroad in the context of other potentially influential college experiences. Astin’s input-environment-output model (1970a, 1970b) and Pascarella’s general model for assessing the effects of differential environments on student learning and cognitive outcomes (1985) emphasize (a) a longitudinal conceptualization of assessing change over time and (b) a systems perspective that accounts for the range of different individual and institutional influences that simultaneously shape student development during postsecondary education. These influences include (a) student precollege characteristics,

**Figure 1.** The effect of study abroad net of selection variables/covariates and other college experiences.



(b) institutional characteristics, and (c) within college experiences. These models have been successfully applied previously to test the effect of numerous college and university programs or experiences on complex educational outcomes related to diversity issues, interactions across difference, and various aspects of intercultural competence (see Pascarella & Terenzini, 2005 for an exhaustive review). Figure 1 provides a visual portrayal of the current study's conceptual model.

This general model is adapted to account for the longitudinal design of the WNS. This study presupposes that students who participate in study abroad are influenced, not only by their background/precollege characteristics and institutional type, but also by within college experiences. In turn, we hypothesize that study abroad participation generates a statistically significant net effect on intercultural competence after accounting for the effects of precollege characteristics, institutional characteristics, and within college experiences.

## Methods

The following section describes the nature of the sample, the variables included in the study, and the statistical analysis employed.

## Sample

This study examined student survey data from the 17 participating four-year institutions in the 2006 cohort of the WNS. The WNS includes a full range of institutional types that vary widely in selectivity, size, location, religious affiliation, and public/private control. The final analytic sample included the 1,647 students who provided complete data at all three data collection points throughout the cohort's college career: early fall of their first year (4,193 respondents), end of their first year (2,953 respondents; a 63.2% response rate), and at the end of their fourth year (1,865 respondents; a 44.5% response rate). During the first data collection students provided extensive information regarding demographic characteristics; family background; high school experiences; college and career aspirations; and personal attitudes, values, and beliefs. Students were also asked to complete standardized instruments for each of the educational outcomes associated with the WNS. In addition, students agreed to permit institutions to share institutional admissions, progress, and completion data including individual ACT (or SAT) scores, financial aid, credits accumulated, and cumulative GPA. During the second data collection at the end of the first year, students completed the same standardized instruments related to the outcomes assessed by the WNS as well as a series of surveys regarding their college experiences during their first year. Finally, at the end of the fourth year students returned to complete the same standardized outcome measures and a similar set of surveys regarding college experiences (see Pascarella and colleagues, 2007 for a complete description of the WNS study design).

## Variables Included in the Study

The independent variable of interest, participation in study abroad, came from a single item gathered during the third data collection that asked whether the student studied abroad during college. In addition to the primary item of interest, Table 1 provides a detailed description of all precollege, institutional, and college experience variables that are included in this study.

The dependent variable, intercultural competence, was measured by the Miville-Guzman Universality-Diversity Scale (MGUDS, 1999). The MGUDS was developed to measure an individual's universal-diverse orientation, or the degree to which an individual possesses an "attitude of awareness and acceptance of both similarities and differences that exist among people" (Miville et al., 1999, p. 292). Several previous studies have successfully used MGUDS as an outcome measure of intercultural competence (Fuertes, Sedlacek, Roger, & Mohr, 2000; Longerbeam & Sedlacek, 2006; Singley & Sedlacek, 2004; Strauss & Connerley, 2003). Moreover, the external validity of the MGUDS is supported by studies that used the instrument to predict attitudes among first-year college students toward diversity in a college setting (Fuertes, Sedlacek, Roger, & Mohr, 2000) and White students' perceptions of non-White mental health counselors (Fuertes & Gelso, 2000; Fuertes & Brobst, 2002).

The MGUDS total scale is composed of three subscales that contribute equally to the overarching construct. The Diversity of Contact subscale measures the respondent's engagement in

**Table 1**  
**Names, Descriptions, and Response Options for Variables Used in this Study**

Variable Name	Description	Response Options
Intercultural competence pretest	The Miville-Guzman Universality Diversity Scale (MGUDS) short form completed at the beginning of the freshmen year.	See Table 1
Intercultural competence posttest	The Miville-Guzman Universality Diversity Scale (MGUDS) short form completed at the end of the fourth year.	See Table 1
Study abroad	Respondent's self-report of participation in an undergraduate study abroad experience gathered at the end of the senior year.	Have not decided, Do not plan to do, Plan to do, Done (Recoded into Yes = 1, No = 0)
Gender	Gender of respondent provided during the first data collection.	Male = 1, Female = 0
Race	Race of respondent provided during the first data collection.	White = 1, Other = 0
Precollege tested academic preparation	ACT, SAT, or COMPASS score provided by the institution during the first data collection then converted to an ACT metric.	Score range—16 to 36
Parents' educational attainment	Average of the respondent's reported parents' educational attainment provided during the first data collection at the beginning of the freshmen year. (If only one parent's score was provided, this score was used in place of an average.)	Scores range from 11 (did not finish high school) to 20 (both parents have earned a doctorate)
Socioeconomic status	Institutional data indicating if the respondent met the threshold for federal financial aid and received a Pell Grant.	Yes = 1, No = 0
Positive attitude toward literacy scale	A six-item scale measuring respondents' enjoyment and benefits from reading and writing (WNS Alpha = .69). Constituent items include: <ul style="list-style-type: none"> <li>- I enjoy reading poetry and literature.</li> <li>- I enjoy reading about science.</li> <li>- I enjoy reading about history.</li> <li>- I enjoy expressing ideas in writing.</li> <li>- After writing about something, I see that subject differently.</li> <li>- If I have something good to read, I am never bored.</li> </ul>	Strongly disagree, Disagree, Neutral, Agree, Strongly agree
Institutional type	Carnegie Classification of each institution participating in the WNS.	Liberal arts college = 1, Other = 0
Humanities, fine arts, or social science major	Respondent majored in a humanities, fine arts, or social science field.	Yes = 1, No = 0
Cocurricular involvement*	Respondent's self-report of participation in cocurricular activities such as student organizations, campus publications, student government, Greek organizations, athletics, etc.	0 hours, 1–5 hours, 6–10 hours, 11–15 hours, 16–20 hours, 21–25 hours, 26–30 hours, more than 30 hours

Table I continued

**Names, Descriptions, and Response Options for Variables Used in this Study**

Variable Name	Description	Response Options
Diverse experiences and interactions scale*	<p>A nine-item scale measuring respondents' engagement in conversations, interactions, and experiences with diverse individuals (WNS Alpha = .80). Constituent items include:</p> <ul style="list-style-type: none"> <li>- How often did you attend a debate or lecture on a current political/ social issue during this academic year?</li> <li>- How often did you have serious discussions with staff whose political, social, or religious opinions were different than your own?</li> <li>- How often did you participate in a racial or cultural awareness workshop during this academic year?</li> </ul> <hr/> <p>- Indicate the extent to which your institution emphasizes encouraging contact among students from different economic, social, and racial or ethnic backgrounds.</p> <hr/> <ul style="list-style-type: none"> <li>- During the current school year, how often have you had serious conversations with students of a different race or ethnicity than your own?</li> <li>- During the current school year, how often have you had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values?</li> <li>- How often have you had discussions regarding inter-group relations with diverse students while attending this college?</li> <li>- How often have you had meaningful and honest discussions about issues related to social justice with diverse students while attending this college?</li> <li>- How often have you shared personal feelings and problems with diverse students while attending this college?</li> </ul>	<p>Very often, Often, Sometimes, Rarely, Never</p> <hr/> <p>Very little, Some, Quite a bit, Very much</p> <hr/> <p>Never, Sometimes, Often, Very often</p> <hr/> <p>Very often, Often, Sometimes, Rarely, Never</p>
Integrative learning experiences scale*	<p>A nine-item scale measuring the extent to which the respondent has integrated knowledge, information, or skills gained in one setting into learning experiences engaged in a different environment (WNS Alpha = .76). Constituent items include:</p> <ul style="list-style-type: none"> <li>- My courses have helped me understand the historical, political, and social connections of past events.</li> <li>- My courses have helped me see the connections between my intended career and how it affects society.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>- Out-of-class experiences have helped me connect what was learned in the classroom with life events.</li> <li>- Out-of-class experiences have helped me translate knowledge and understanding from the classroom into action.</li> </ul>	<p>Strongly disagree, Disagree, Neutral, Agree, Strongly agree</p> <hr/> <p>Very often, Often, Sometimes, Rarely, Never</p>



Table I continued

**Names, Descriptions, and Response Options for Variables Used in this Study**

Variable Name	Description	Response Options
	<ul style="list-style-type: none"> <li>- During the current school year, how often have you worked on a paper or project that required integrating ideas or information from various sources?</li> <li>- During the current school year, how often have you put together ideas or concepts from different courses when completing assignments or during class discussions?</li> <li>- During the current school year, how often have you discussed ideas from readings or classes with others outside of class (students, family members, coworkers, etc.)?</li> <li>- During the current school year, how much time have you spent synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships?</li> <li>- During the current school year, how much time have you spent making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data, and assessing the soundness of their conclusions?</li> </ul>	Never, Sometimes, Often, Very often    Very little, Some, Quite a bit, Very much
Intent to study abroad	Respondent's self-report of intent to participate in an undergraduate study abroad experience gathered at the end of the freshmen year.	Have not decided, Do not plan to do, Plan to do, Done; Recoded into Plan to do = 1, Other = 0 (38 respondents who indicated "Done" at this data gathering point were eliminated from the analysis)

\* Two versions of these variables are used in this analysis, one from data collected at the end of the first year and one from data collected at the end of the senior year.

diverse social and cultural activities. The Relativistic Appreciation subscale measures the respondent's recognition of both similarities and differences among diverse groups and the connection between that recognition and their own growth. The Comfort with Difference subscale measures the respondent's comfort with diverse interactions.

Fuertes, Miville, Mohr, Sedlacek, and Gretchen (2000) conducted a multistage factor analysis study and derived an equally predictive short form of the MGUDS instrument that reduced the length of the instrument from 45 to 15 questions with 5 questions in each subscale. Because of the comprehensive nature of the WNS, the WNS designers chose to utilize the MGUDS short form. Table 2 shows the complete set of items for the MGUDS short form total and subscale scores. Alpha reliabilities for the subscales among WNS respondents range from .77 to .78, while the alpha reliability for the total MGUDS score range from .83 to .85.

## Analysis

This study utilized an OLS regression equation to assess the effect of study abroad on intercultural competence. In addition, several steps were conducted to address issues of selection, sampling, and ease of interpretation. First, although the data included a variable directly addressing intent to study abroad, it was important to test whether this variable could adequately account for the potential influence of a selection effect. Informed by the prior research on study abroad participation reviewed above, a logistic regression equation revealed multiple predictors of study abroad participation above and beyond intent. As expected, identifying as male, ACT score, parental education, attending a liberal arts college, being engaged in integrative experiences during the first year of college, and the respondents' precollege intercultural competence score were all significant predictors of study abroad participation. The results of this analysis confirmed the need to include an additional procedure to account more fully for potential selection bias. (A detailed table of these results is available from the first author by request.)

Several statistical procedures including doubly robust estimation, propensity score matching, and instrumental variables can effectively address the selection effect in quantitative analysis (Caliendo & Kopeinig, 2008; Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007). This analysis employed doubly robust estimation because of the longitudinal research design of the WNS, the availability of a pretest, and the range of variables available for analysis (Bang & Robins, 2005; Funk et al., 2011). Utilizing the previously conducted logistic regression equation to produce a propensity score for each respondent assessing the likelihood of participation in study abroad (Rosenbaum & Rubin, 1983), this propensity score was added to the OLS regression equation as an additional control to adjust for the selection effect. This procedure was repeated, with the appropriate corresponding variables, to analyze the impact of study abroad on each of the constituent subscales.

Second, because data from the WNS were not drawn from a simple random sample but rather from sampling procedures that varied slightly between institutions, the error terms from the pre-

Table 2

**The Miville-Guzman Universality-Diversity Scale – Short Form**


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1 <sup>a</sup>	I would like to join an organization that emphasizes getting to know people from different countries.
2 <sup>c</sup>	Persons with disabilities can teach me things I could not learn elsewhere.
3 <sup>b</sup>	Getting to know someone of another race is generally an uncomfortable experience for me.
4 <sup>a</sup>	I would like to go to dances that feature music from other countries.
5 <sup>c</sup>	I can best understand someone after I get to know how he/she is both similar and different from me.
6 <sup>b</sup>	I am only at ease with people of my race.
7 <sup>a</sup>	I often listen to music of other cultures.
8 <sup>c</sup>	Knowing how a person differs from me greatly enhances our friendship.
9 <sup>b</sup>	It's really hard for me to feel close to a person from another race.
10 <sup>a</sup>	I am interested in learning about the many cultures that have existed in this world.
11 <sup>c</sup>	In getting to know someone, I like knowing both how he/she differs from me and is similar to me.
12 <sup>b</sup>	It is very important that a friend agrees with me on most issues.
13 <sup>a</sup>	I attend events where I might get to know people from different racial backgrounds.
14 <sup>c</sup>	Knowing about the different experiences of other people helps me understand my own problems better.
15 <sup>b</sup>	I often feel irritated by persons of a different race.

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Response options for each item: 1 = strongly disagree, 2 = disagree, 3 = disagree a little bit, 4 = agree a little bit, 5 = agree, 6 = strongly agree

a - diversity of contact subscale

b - comfort with difference subscale

c - relativistic appreciation subscale

diction model would likely be correlated, violating an assumption of OLS regression (Raudenbush & Bryk, 2002). This issue can be addressed by using a statistical technique that adjusts standard errors for clustered data (Groves et al., 2004). However, this procedure necessarily limits the number of variables used in the regression equation to the number of aggregate units. Since limiting the final regression equation to 17 variables threatened the full specification of our model, the minimum threshold for determining statistical significance was reduced from a *p* value of .05 to .01 to ensure protection against Type I error (i.e., finding statistical significance where there is none). Finally, all continuous variables were standardized prior to analysis to produce comparable effect sizes.

## Limitations of the Study

This study is not without limitations. First, although the WNS made extensive efforts to generate a diverse sample of institutions and students, the generalizability of these findings are limited by the lack of a truly representative national sample. Additionally, the sample only includes students who participated in each of the three WNS data collections. Second, addressing the issue of selection is based only on variables gathered by the WNS. It is, therefore, possible that variables not identified might contribute to selection bias. Third, the decision to account for the clustered nature of the data by choosing a more conservative minimum threshold for rejecting the null hypothesis may have in fact introduced the possibility, however low, of Type II error (i.e., reporting insignificance when the result is actually significant). Fourth, intercultural communication scholars have long recognized that the construct of intercultural competence is complex and includes a behavioral component that is difficult to capture fully in a survey instrument (see Deardorff, 2006; Spitzberg & Changnon, 2009). The present study may in fact only measure some elements of intercultural competence rather than the construct in its conceptual entirety.

Fifth, the WNS did not collect data from students during each academic year, choosing instead to gather student experience data at the end of the first and fourth year. This omission presents potentially serious limitations in precisely isolating the effect of study abroad on intercultural competence in the fullest context of the college experience.

Finally, although study abroad programs vary widely, the WNS dataset only measured participation in study abroad generally and did not gather data on differences in program location, length, or depth of immersion. The inability to account for this multidimensional variation between study abroad participants presents a potentially severe limitation in accurately identifying an effect. At the same time, if the current analysis produces a significant effect in spite of the variation that likely resides within a general measure of study abroad participation, the finding may in fact underestimate the actual effect of study abroad under certain conditions.

## Results

Table 3 presents the results of this effort to test the hypothesized effect of study abroad in intercultural competence. The first column of results presents the effects of the model on the total measure of intercultural competence (MGUDS) and the following three columns present the effects of the model on each of MGUDS' constituent scales. Moreover, because the model includes a parallel pretest MGUDS score, any significant effect can be interpreted as an effect on the difference or change between the pretest and posttest scores (Pascarella, Wolniak, & Pierson, 2003).

First, even in the presence of precollege demographic traits, institutional characteristics, within college experiences, intent to study abroad, and a parallel pretest intercultural competence score, study abroad participation generated a significant positive effect (.143,  $p < .001$ ) on the overall posttest measure of intercultural competence. Second, the significant effect of study abroad on

Table 3

**Estimated Net Effects of Study Abroad on Fourth-Year Intercultural Competence and Its Constituent Subscales With Controls for Precollege Characteristics, College Experiences, and a Propensity Score to Adjust for Selection**

Variable	MGUDS	MGUDS Subscales		
	Total Score	Diversity of Contact	Relativistic Appreciation	Comfort w/ Difference
R <sup>2</sup> Total Model	.517***	.522***	.307***	.325***
Parallel precollege MGUDS scale score	.464*** (.024)	.451*** (.029)	.407*** (.024)	.439*** (.022)
Gender (male = 1)	-.049 (.045)	-.065 (.044)	-.064 (.055)	-.019 (.056)
Race (White = 1)	-.026 (.052)	-.085 (.052)	-.011 (.062)	.039 (.060)
Precollege tested academic preparation	-.003 (.045)	-.021 (.045)	.006 (.054)	-.007 (.054)
Parents' educational attainment	.027 (.022)	.045 (.022)	-.003 (.027)	.009 (.027)
Socioeconomic status (Pell Grant = 1)	.068 (.056)	.088 (.055)	.005 (.067)	.054 (.066)
Positive attitude toward literacy scale	.037 (.023)	.064** (.021)	.026 (.025)	-.001 (.024)
Institutional type (liberal arts college = 1)	-.030 (.073)	.005 (.071)	-.073 (.087)	-.051 (.086)
1st-year cocurricular involvement	-.026 (.021)	-.033 (.021)	.023 (.026)	-.047 (.025)
1st-year diverse experiences	-.023 (.024)	-.016 (.024)	-.021 (.028)	-.008 (.028)
1st-year integrative learning experiences	-.012 (.025)	-.050 (.026)	.022 (.031)	.010 (.031)
Intent to study abroad	.176 (.172)	.140 (.166)	.138 (.210)	.038 (.210)
4th-year cocurricular involvement	-.026 (.020)	-.000 (.020)	-.041 (.024)	-.026 (.024)

Table 3 continued

**Estimated Net Effects of Study Abroad on Fourth-Year Intercultural Competence and Its Constituent Subscales With Controls for Precollege Characteristics, College Experiences, and a Propensity Score to Adjust for Selection**

Variable	MGUDS Total Score	MGUDS Subscales		
		Diversity of Contact	Relativistic Appreciation	Comfort w/ Difference
4th-year diverse experiences	.282*** (.024)	.269*** (.024)	.132*** (.029)	.237*** (.028)
4th-year integrative learning experiences	.143*** (.022)	.095*** (.022)	.178*** (.027)	.066 (.026)
Humanities, social science, fine arts major	-.028 (.037)	.050 (.037)	-.069 (.044)	-.064 (.044)
Propensity score	-.151 (.440)	-.049 (.434)	-.135 (.531)	.051 (.530)
Study abroad participation	.143*** (.040)	.242*** (.040)	-.001 (.047)	.042 (.047)

\*\*  $p < .01$ , \*\*\*  $p < .001$ ; standard errors are listed in parentheses

the overall measure of intercultural competence was not replicated across each of the constituent subscales. As presented in the three columns on the right side of Table 3, although studying abroad generated a significant positive effect (.242,  $p < .001$ ) on the Diversity of Contact subscale, its effect on the Relativistic Appreciation and Comfort with Difference subscales was miniscule and not significant. Third, in addition to study abroad two other college experiences—fourth-year diverse experiences and fourth-year integrated learning experiences—generated significant positive effects (.282 and .143 respectively;  $p < .001$ ) on the total measure of intercultural competence. Furthermore, while study abroad seemed less influential across the three constituent subscales, fourth-year diverse experiences and fourth-year integrative learning experiences appear more comprehensively influential. Fourth-year integrative learning experiences significantly affected the Diversity of Contact and the Relativistic Appreciation subscales, while fourth-year diverse experiences significantly affected all three subscales.

## Discussion

These findings hold important implications for educational policy makers, higher education institutions, and study abroad advocates. Although international educators have long attributed

various educational benefits to study abroad, the lack of rigorously obtained supporting evidence has left these assertions vulnerable to the alternative suggestion that the impact of study abroad is actually a function of something other than the experience itself or, more cynically, that the benefits claimed of study abroad are more aspirational than actual. The finding of this study suggests that although students who study abroad make unique gains on an overall measure of intercultural competence, the nature of this gain across the three constructs underlying the overall measure suggests only marginal support for the initial hypothesis of this study and, more importantly, may appear to challenge the more widely asserted relationship between study abroad and intercultural competence. Although study abroad participation seems to increase a student's diversity of contact, it appears to have little influence on a student's relativistic appreciation of cultural differences or comfort with difference. To the degree that the international education community might welcome these findings, these results also suggest caution, concern, and a need for additional inquiry. If study abroad only influences diversity of contact but has no effect on growth along other domains, then study abroad by itself may not be as transformative as previously claimed. Alternately, if increasing diversity of contact is a necessary precursor for substantive comfort with difference and relativistic appreciation of cultural difference, then educators cannot discount the potential educational importance of study abroad.

Yet these findings suggest that on-campus diverse interactions and integrative learning experiences can also influence intercultural competence development. In fact, the size of the estimated effects across multiple subscales suggests that these experiences might be comparatively more effective in developing intercultural competence than study abroad. Taken together, the findings of this study seem to present an ideal opportunity for outcome-based partnerships between student affairs and academic affairs to accentuate and embed complex intercultural competency in students. Institutions might design cocurricular experiences for returning students to reflect on their international experience and integrate the meaning they make of that experience in the context of their current development and future goals. Collaborations might identify ways in which study abroad and campus-based experiences are most effectively linked to influence growth on additional educational outcomes beyond intercultural competence.

Finally, these findings present a number of opportunities for future research. Since this study only examined the effect of study abroad generally, it merely sets a baseline for understanding the potential differential effects of study abroad across the array of programmatic differences that currently exist. Moreover, these potential differences might be further moderated by individual student characteristics. For example, this study found that students with high precollege intercultural competence scores were more likely to participate in study abroad, suggesting that the relationship between study abroad and intercultural competence is one of selection and accentuation. Armed with this finding, postsecondary institutions might better meet institutional learning outcomes by examining whether certain types of study abroad programs are better suited for certain types of students, and even whether some students may indeed be better suited to

study abroad than others. This kind of research would provide institutions with the educational roadmap necessary to align diverse students' types and diverse educational experiences across a range of educational outcomes. Indeed, if students who might benefit most from studying abroad are in fact the least likely to participate, institutions might reallocate funding to more effectively address the obstacles to participation among minority, male, and first-generation students (Salisbury, Paulsen, & Pascarella, 2010, 2011).

## Conclusion

The increasingly compelling argument for study abroad is rooted in the undeniable realities of a globally intertwined world. At the same time, the public has demanded greater accountability from higher education institutions in documenting and demonstrating educational value while educational policy makers have emphasized the need for rigorously designed research to inform better funding decisions. In this context, international education advocates have recognized that impassioned arguments are no longer enough to justify substantive public investment in study abroad. The current study is among the first to rigorously document the effect of study abroad on intercultural competence using conceptually and statistically appropriate analytic methods. Educational researchers should continue to seek a deeper understanding of the broad range of educational experiences, including study abroad, that can effectively prepare students to succeed in a globally interconnected world. In addition, institutions must design educational sequences involving curricular and cocurricular educators to ensure that the learning potential of study abroad is ultimately realized long after they return to campus.

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