

Evaluation of Study Abroad Outcomes

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Abstract

The Intercultural Student Attitude Scale (ISAS) is an innovative instrument for evaluating the impact of international study on undergraduate students and appraising study abroad program effectiveness. Developed to efficiently and inexpensively evaluate changes in student attitudes while studying internationally, the ISAS is intended for use by university study abroad programs. The ISAS has been validated with published cross-cultural and brief personality measures and has excellent reliability. Six factors include adventurousness, desire for an international career, cultural open-mindedness, stress management, self-confidence, and interest in studying foreign languages. The current pre-post study compares 457 students from multiple US universities studying abroad with 701 control students in the US, mostly business and economics majors. Students of minority ethnicity, students with previous international travel experience, and students with international career goals scored higher than contrasting groups at pre-test. Study abroad students' scores rose significantly while control students' scores did not change.

Intercultural Competence

Intercultural competence includes the ability to behave and communicate effectively and appropriately in another culture; adaptability to new and different environments; cognitive flexibility; and openness, respect, and curiosity about cultural differences (Deardorff, 2006). These skills and attributes are similar to those defined as cultural intelligence or CQ, which encompasses cognitive, metacognitive, motivational, and behavioral aspects that enable one to adapt to a new culture (Ward, Fischer, Lam, & Hall, 2009). Cognitive CQ refers to specific cultural knowledge; metacognitive CQ is cultural awareness and thoughtfulness during cross-cultural interactions; motivational CQ encompasses the desire to learn about and function effectively in intercultural situations; and behavioral CQ consists of flexibility within the repertoire of actions available to an individual. A related concept is that of global-mindedness, which is an orientation toward an international understanding of human problems and responsibilities rather than a national focus (Kehl & Morris, 2007-2008). As an aspect of intercultural competence, ethnocentrism has been defined as a worldview that one's own culture is superior to others, in contrast to ethnorelativism, in which one's culture is experienced within the context of other cultures (Hammer, Bennett, & Wiseman, 2003).

Measures of Intercultural Competence

Several instruments have been designed for the purpose of assessing intercultural competence constructs such as global mindedness, cultural sensitivity, cultural competence, intercultural communication, and ethnorelativism and its obverse, ethnocentrism. These include the Intercultural Development Inventory (IDI, Bennett & Hammer, 2002), which measures progress on dimensions of Bennett's Developmental Model of Intercultural Sensitivity (Hammer, Bennett, & Wiseman, 2003). This theoretical model posits six stages of adaptation to cultural difference, from denial to integration, which track an individual's progress from ethnocentrism to ethnorelativism. Subscales assess aspects of worldview such as polarization, similarity, acceptance, and marginality.

The Intercultural Sensitivity Scale (Chen & Starosta, 2000) focuses on confidence and openness in cross-cultural communication as an aspect of overall intercultural competence. The Cross-Cultural Adaptability Inventory (CCAI, Kelley & Meyers, 1995) is used to assess cross-cultural training needs for managers as well as in research on outcomes of study abroad and international sojourns. The CCAI measures four factors named Flexibility-Openness, Emotional Resilience, Perceptual Acuity, and Personal Autonomy. The Multicultural Personality Questionnaire (MPQ, Van der Zee & Van Oudenhoven, 2000) was designed to assess the multicultural effectiveness of employees in international settings for diagnostic and training purposes.

Outcomes of Study Abroad

Cultural competence or intercultural sensitivity is frequently cited as a desirable outcome of study abroad (e.g., Engle & Engle, 2004; Hammer, Bennett, & Wiseman, 2003; Paige, Cohen, & Shively, 2004). Kitsantis (2004) showed that the total score of the CCAI and all subscales except Perceptual Acuity increased significantly following completion of European study abroad programs. Parsons (2009) studied a large sample (1,302) of students at three universities in Australia and the US to determine which characteristics affected global-mindedness variables including interest in other countries and cultures, cognitive and behavioral flexibility and openness, and respect for other cultures and nations. Among the strongest predictors of higher scores were studying abroad and experiences such as attending international events, taking courses with international content, and having international friends. Goldstein and Kim (2006) followed 179 undergraduates over their four-year college careers to assess the relationships between studying abroad and variables including ethnocentrism, prejudice, and foreign language interest. Women scored lower than men on ethnocentrism and interest in foreign language study, and a greater proportion of women studied abroad. The 61 students who completed a semester or full-year program abroad demonstrated

significantly lower levels of ethnocentrism and prejudice and greater interest in foreign language study than students who did not study abroad.

Anderson, Lawton, Rexeisen, and Hubbard (2006) assessed the impact of a four-week program in England and Ireland with the IDI, concluding that even a program of this length produced measurable gains in acceptance and adaptation to cultural differences. The same researchers (Rexeisen, Anderson, Lawton, & Hubbard, 2008) found small but significant gains in overall development as measured by the IDI after a semester program in London, though these gains did not persist at a four-month follow-up. Rexeisen and Al-Khatib (2009) demonstrated significant growth on the IDI after a semester program. Chieffo and Griffiths (2004) found improvements in personal growth, including perceived foreign language competence and use, after a five-week international session. Qualitative reports from these study abroad students emphasized personal growth and adaptability, whereas responses from students who stayed home focused on classroom learning.

Intercultural competence is likely to be correlated with personality factors, as Ang, Van Dyne, and Koh (2006) found between the four types of CQ and Big Five personality factors, though Openness to Experience was the only personality factor significantly correlated with all four CQ aspects. Openness to Experience and the related personality characteristic of tolerance of ambiguity were shown to predict participation in international exchange programs in Australia (Bakalis & Joiner, 2004). Emotional intelligence and entrepreneurial attitude orientation (Harrison & Voelker, 2008) and self-monitoring and core self-evaluations (Harrison, 2006) have been included in studies of intercultural effectiveness with positive relationships to aspects of intercultural competence as a result of study abroad.

The MPQ predicted the adjustment of international students in terms of health, subjective well-being, and peer support (Van Oudenhoven & Van der Zee, 2002). The MPQ factors include

Openness, Emotional Stability, Flexibility, and Social Initiative (Van der Zee & Van Oudenhoven, 2000). Correlations with the Big Five personality factors of Openness to Experience, Neuroticism, Agreeableness, Extraversion, and Conscientiousness were strongest for Openness on the MPQ with Openness to Experience, Emotional Stability on the MPQ with the inverse of Neuroticism, and MPQ Social Initiative with Extraversion.

In addition to growth in intercultural competence in general, international living experiences have been linked to increased creativity (Maddux & Galinsky, 2009). Across five studies, people who had lived abroad consistently performed better on tests of creativity, with those who had lived abroad the longest showing the highest levels of creativity. Increased self-efficacy was identified as another positive outcome of study abroad for over 95% of participants in a program based in Japan (Milstein, 2005).

Interestingly, study abroad programs have consistently shown greater attraction for women than men (Chieffo & Griffiths, 2004; Goldstein & Kim, 2006; Harrison & Voelker, 2008; Rexeisen, Anderson, Lawton, & Hubbard, 2008). Open Doors (Institute of International Education, 2011) data on the student profile for US study abroad show a consistent ratio of about 65% women to 35% men between academic years 1999-2000 and 2008-2009.

Short-Term versus Long-Term Programs

Medina-López-Portillo (2004) found large differences in cultural identity between seven-week and 16-week study abroad programs in Mexico in a qualitative study, though IDI scores did not demonstrate significant differences between groups or significant growth for either group. Longer-term students had higher scores on the IDI at pre-test, with fully half of the group having attained an ethnorelative worldview. Only one-third of the short-term students had developed or begun to develop an ethnorelative worldview, and over half remained in the same DMIS stage from pre- to post-test. Two-thirds of longer-term participants advanced to the next stage in the DMIS

model, suggesting greater effect for that program. Small sample sizes (18 short-term and 10 long-term participants) limited the power to detect real differences.

Zorn (1996) reported that 12-16 week programs had greater effects on nursing students' global-mindedness and personal growth than did 3-4 week programs. Dwyer (2004) concluded from a large-scale retrospective survey that studying abroad for a full year resulted in greater linguistic ability, higher levels of attendance in graduate school and completion of a Ph.D. degree, as well as a greater likelihood of speaking a language other than English in the workplace, working for a multi-national organization, and getting an international job. Even shorter-term participants reported that studying abroad resulted in increased self-confidence, greater understanding of their own values and biases, and lasting effects on their worldview. This study, which reached participants who had studied abroad as much as 50 years earlier, was able to show significant long-term behavioral effects, such as degree and career attainment, that are impossible to measure when surveys are administered shortly after the completion of study abroad programs.

Island programs are generally considered to be those in which the language of instruction is English and American students study together in an international setting (Kehl & Morris, 2007-2008). In a review of the literature on island programs, the authors reported that study abroad experience resulted in increased global-mindedness, with females consistently scoring higher than males. Their research on three island programs, using a control group of students who planned to study abroad in the future, demonstrated that global-mindedness did not differ between students who studied abroad for eight weeks and controls. However, semester program students earned significantly higher scores on a global-mindedness scale than did eight-week program participants and control students.

Foreign Language Study and International Career Interest

Two characteristics that are particularly relevant to undergraduate students are foreign language study and interest in an international career. Engle and Engle (2004) showed that French skills increased during semester and full-year study abroad terms in France along with intercultural sensitivity as measured by the IDI, with full-year program participants showing the most growth. Mendelson (2004) evaluated 43 students who participated in four-week and 14-week sessions in Spain. Self-evaluation of language proficiency tended to be higher than actual performance at both pre-test and post-test, though objective measures of language proficiency increased for both session lengths. This study revealed that students may have unrealistic ideals about their own language proficiency and about how much improvement they will attain during their program, as well as overly high opinions of the value of informal interaction compared to formal lessons.

Orahood, Kruze, and Pearson (2004) evaluated whether business students who studied abroad would be more interested in careers with an international dimension than those who have not studied abroad. Results showed that 96% of study abroad students reported that their study abroad experience had made a difference in their career plans, with a larger percentage of study abroad students (83%) interested in working internationally than control students (51%). In this study, students who had studied abroad evaluated their foreign language competence more critically than those who stayed at home.

Limitations of Study Abroad Research

The literature on study abroad outcomes is fairly large, but empirical research has often failed to include control group comparisons or pre-post designs that would allow robust conclusions to be drawn about the effects of study abroad experiences. For example, Sutton and Rubin (2004) reported that 255 study abroad students scored significantly higher than 249 control students on knowledge of global interdependence and knowledge of cultural relativism. These effects persisted

when GPA and college major were controlled, but the absence of pretest data make the authors' conclusions that the measured outcomes were due to the study abroad experience impossible to confirm. Paige, Cohen, and Shively (2004) found significant growth on IDI dimensions in a pre-post study but without a control group for comparison. In research with students who studied in Nepal, Farrell and Suvedi (2003) concluded that cultural empathy and global perspective were enhanced by the study abroad experience. They used qualitative methods in addition to a survey for which each question was analyzed independently. This was a post-test study only, reflecting former students' perceptions of the benefits of their international experience. Similarly, Harrison and Voelker (2008) evaluated only post-travel surveys in their study on the relationship between personality variables and cross-cultural adjustment.

In many empirical studies, instruments designed to measure intercultural competence were prepared by the researchers without adequate analysis of the psychometric properties of the items or scales and without evidence of a scale development process or scale revision (e.g., Chieffo & Griffiths, 2004; Dwyer, 2004; Farrell & Suvedi, 2003; Harrison, 2006; Milstein, 2005; Orahod, Kruze, & Pearson, 2004; Sizoo, 2006; Sutton & Rubin, 2004). Furthermore, many studies fail to control Type I error across multiple comparisons, including analysis of responses to individual survey questions, leading to potentially spuriously significance in results (Chieffo & Griffiths, 2004; Dwyer, 2004; Farrell & Suvedi, 2003; Harrison, 2006).

Theoretical Background

Based on previous research as well as anecdotal evidence from returning students, the attitudes affected by study abroad include open-mindedness, adventurousness, self-confidence, and stress management, along with heightened interest in learning a foreign language and choosing an international career. Theoretical bases for these changes come from several sources. Intergroup contact theory has produced empirical support for the original hypothesis put forward by Allport in

1954 that contact between members of different groups reduces intergroup prejudice (Pettigrew, Tropp, Wagner, & Christ, 2011). Additional positive effects of intergroup contact include reduced anxiety, increased intergroup trust, enhanced empathy and perspective taking, and increased perceptions of outgroup variability with concomitant reductions in stereotyping. Furthermore, contact effects typically generalize to other outgroups through global reduction in negative attitudes (Pettigrew et al., 2011). According to this theory, study abroad should result in reduction of perceptions of difference between American students and members of foreign cultures along with subsequent increases in empathy, trust, and the ability to take alternate perspectives. These attitudes relate to the concept of open-mindedness, which is not just tolerance but curiosity about, acceptance of, and empathy with members of other cultures.

Adventurousness refers to the inclination to engage in new experiences. The basis for adventurousness as a characteristic of students who study abroad may be found in Zuckerman's (2004) concept of sensation seeking, which was initiated in his work on anxiety produced by sensory deprivation. He later found through twin studies that the heritability of sensation seeking was at the upper bounds of the range of personality traits in general. A genetic basis for sensation seeking was identified with the first discovery of a gene associated with a specific personality trait (Ebstein et al., 1996). Zuckerman (2004) described sensation seeking as a subtrait of the personality factor of extraversion, related not only to highly risky behavior such as extreme sports but also to more mundane personal characteristics such as taste in music, art, and food, vocational preferences, cognitive styles, and creativity. Sensation seeking was included in the Multicultural Personality Questionnaire as Need for Change, which was positively correlated with Openness, Social Initiative, and Flexibility (Van der Zee & Van Oudenhoven, 2000)

Self-confidence and the ability to manage stressful situations originated with Bandura's theory of self-efficacy (2004). Bandura's conceptualization of self-efficacy is the belief that an one is

capable of accomplishing one's goals. A substantial body of research has shown the relationship of self-efficacy to motivation and goal attainment in diverse areas of human accomplishment. Bandura described the most effective method for developing self-efficacy as the experience of mastery. A resilient sense of personal self-efficacy is enhanced by the experience of success through effort and perseverance as well as by the management of failure.

Method

Development of the Intercultural Student Attitude Survey

The Intercultural Student Attitude Survey (ISAS) was devised to assess changes in the characteristics of open-mindedness, adventurousness, self-confidence, and resilience to stress, along with interest in foreign language study and an international career. The ISAS focuses narrowly on the student context of study abroad rather than other types of international experience. Because the ISAS measures attitudes rather than specific cultural knowledge or skills, it reflects primarily the motivational aspect of cultural intelligence (Ward, Fischer, Lam, & Hall, 2009). While some of the content of the ISAS is similar to the Intercultural Sensitivity Scale (Chen & Starosta, 2000), the changes that are observed as a result of international study extend beyond intercultural communication. The ISAS also measures content similar to that of the Cross-Cultural Adaptability Inventory (Kelley & Meyers, 1995) and the Multicultural Personality Questionnaire (Van der Zee & Van Oudenhoven, 2000), both of which are proprietary scales that are not geared to students. Beyond intercultural competence, foreign language study and future international careers are relevant issues for undergraduate students that are influenced by studying abroad (Orahood, Kruse, & Pearson, 2004).

ISAS items were initially written by the authors and field tested with study abroad students from over 20 US universities attending a four-week summer session in Italy during 2003. The most promising items were assembled into a 50-item scale on which data were collected from fall 2003

through summer 2004, with the expectation that not all of the items would prove valuable and the scale would ultimately be revised and shortened. Of the 568 students in this dataset, 301 were surveyed in Italy and 267 in the US. Though the internal consistency (alpha coefficient) for the 50-item scale was .91, item analyses resulted in the deletion of items with low point-biserial correlations, or those that did not correlate well with total scores. Exploratory factor analysis using maximum likelihood estimation and direct oblimin rotation resulted in twelve factors with eigenvalues greater than 1 accounting for 58% of scale variance. Items that did not load on any factor or loaded only weakly on their intended factors were removed. For example, three items involving eating unfamiliar food formed a factor that was not central to the purpose of the scale. Similarly, questions about starting one's own company did not enrich any of the desired factors and were deleted. The result was a 35-item scale measuring six desired constructs of open-mindedness or cultural curiosity, adventurousness or risk-taking, resilience or ability to manage stress, self-confidence, and interest in foreign language study and international careers. Items were written in both positive and negative directions and included both cognitive (value) and affective (enjoyment) aspects of these topics.

This version of the ISAS, scored on a six-point scale, was used over eight semester and summer terms, from fall 2007 through fall 2009, with 1105 controls (40% female) and 578 students studying in Italy (61% female). Factor loadings may change from dataset to dataset, particularly when factors are correlated, as are the ISAS factors. Therefore, exploratory factor analysis with maximum likelihood and direct oblimin rotation was used with this large dataset to identify a factor structure for further analyses. Six factors were specified, accounting for 56% of the total variance. The six factors were named New Experiences (for adventurousness and risk-taking), International Careers, Open-Mindedness, Stress Management (for resilience in dealing with difficult situations), Self-Confidence, and Foreign Language.

The concurrent validity of the ISAS was evaluated with the CCAI and the Six Factor Personality Questionnaire (SFPQ, Jackson, Paunonen, & Tremblay, 2000). The SFPQ measures the Big Five personality factors of Agreeableness, Openness to Experience, Independence (the inverse of Neuroticism), Extraversion, and Conscientiousness, with Conscientiousness divided into two subfactors of Methodicalness and Industriousness. Results demonstrated strong correlations of the ISAS Open-Mindedness factor with Flexibility-Openness on the CCAI and ISAS Stress Management with Emotional Resilience on the CCAI. Of the personality factors measured by the SFPQ, ISAS Self-Confidence was related to the personality factor of Extraversion, and ISAS International Careers correlated with the Big Five factor of Openness to Experience (Shaftel & Shaftel, 2010). Content similar to the factors of New Experiences and Foreign Language was not assessed by the CCAI or SFPQ.

Purpose of Study

The goal of the current study is the comparison of pre- and post-travel attitudes for students who studied in Italy for either a four-month semester or a one-month summer session with control students at several major US universities in different geographic regions. Additional objectives of the study included further evaluation of the properties of the scale including its ability to discriminate students who study internationally from those who do not and investigation of its sensitivity to other characteristics, including sex, international career goals, and length of previous travel outside of one's native country. Students completed the ISAS online at the beginning and end of the semester or summer session abroad, as did control students in the US, along with questions about demographic variables and previous international travel.

Participants

Data for the current study were obtained during spring, summer, and fall 2010 from 1158 students (701 control and 457 study abroad) from over 25 American universities, all of which send

students to a large undergraduate program located in northern Italy. Four of those universities, located in the Southeast, East, and Midwest, contributed students to the control sample. For both groups, 57% had previously travelled internationally. Fewer of the study abroad students, 29%, were initially planning an international career than control students at 32%. Study abroad participants were 57% female while students in the US were 42% female. White students comprised 81% of the total sample with 7% Asian, 4% Hispanic, 4% African American, and less than 1% Native American participation. Majors included 12 fields of study; the majority, 68%, was studying business or economics. Details about the control and study abroad groups are provided in Tables 1 and 2. Percentages do not sum to 100 when there were missing values for a variable.

Because of the quasi-experimental nature of the research and the self-selection of students to study abroad, the control sample differed significantly from the study abroad sample in several ways. Control students were younger and more ethnically diverse than study abroad students. The study abroad sample represented a higher proportion of summer session students, though each sample covered all three terms. The study abroad sample had a significantly higher GPA than the control group, and study abroad students were significantly more likely to be female. Previous international travel and international career plans did not differ between groups.

Table 1

Demographic Characteristics of Control and Study Abroad Student Samples

Group	Sex		Ethnicity					
	Male	Female	Native American	Asian	African American/Black	Hispanic	White	Multiple/Other
Control								
Number	373	328	4	67	37	30	524	37
Percent	53.2	46.8	0.6	9.6	5.3	4.3	74.8	5.3
Study Abroad								
Number	203	254	1	19	5	12	410	10
Percent	44.4	55.6	0.2	4.2	1.1	2.6	89.7	2.2

Table 2

Other Characteristics of Control and Study Abroad Student Samples

Group	Time			Year				GPA		Previous Travel		International Career Plans	
	Spring	Summer	Fall	Fr	So	Jr	Se	<3.0	≥ 3.0	Yes	No	Yes	No
Control													
Number	428	80	193	280	231	84	102	224	467	403	298	224	477
Percent	61.1	11.4	27.5	39.9	33.0	12.0	14.6	32.4	67.6	57.5	42.5	32.0	68.0
Study Abroad													
Number	119	266	72	2	100	274	81	78	379	259	195	132	322
Percent	26.0	58.2	15.8	0.4	21.9	60.0	17.7	17.1	82.9	56.7	42.7	28.9	70.5

Results

Internal consistency of the ISAS (coefficient alpha) was .90 for the total scale at pre-test and .92 at post-test. The Total score was normally distributed while factor score distributions are close to normal with slight negative skew for New Experiences and Foreign Language.

Univariate analysis of variance was utilized to assess the impact of the demographic variables of sex and ethnicity on pre-test and post-test attitudes. To better manage the small sizes of different ethnic groups, the ethnicity variable was recoded to group Whites (934) into one category and all other ethnicities (222) into a second category. Control for Type I error was managed using a modified Bonferroni method. Males (440) rated themselves significantly higher on Stress Management while females (490) reported higher scores on New Experiences, Open-Mindedness, and Foreign Language. Total scores did not differ by sex. Minority students scored significantly higher on Open-Mindedness at pre-test and on Foreign Language, International Career, and Total score at both times. There were no interaction effects for sex and minority status.

Other student characteristics were similarly tested with respect to pre-test attitudes. Year in school made no difference in self-ratings. A grade point average (GPA) of 3.0 and above was associated with significantly higher pre-test Self-Confidence scores. Previous international travel was associated with score differences in the Total score and all factors except Stress Management at pre-test and with the Total score and International Career at post-test. Interest in an international career was associated with significantly higher scores on all factors except Stress Management and Self-Confidence at both times. The International Career factor score interacted with previous international career interest at post-test in that students who endorsed such plans did not differ by group, whereas study abroad students who had not previously indicated an interest in an international career scored much higher on the International Career factor at post-test than control

students. Eligibility for financial aid was associated with a higher Total score and Foreign Language score at post-test.

Students were asked whether family, friends, professors, advisors, or others had encouraged them to study abroad. Encouragement from friends had a significant interaction with group membership. Open-Mindedness at pre-test and International Career, Foreign Language, and Total at both times were higher for study abroad students than controls if they had not been encouraged by friends to study internationally. Students who had received encouragement did not differ on the basis of group. The same pattern was found for students who marked that no-one had encouraged them to study abroad. Those study abroad students who reported receiving no encouragement had much higher scores on pre- and post-test International Career, Foreign Language, Open-Mindedness, and Total scores than control students. Control and study abroad students who did receive encouragement did not differ.

A repeated measures ANOVA was used to compare the growth in ISAS attitudes for the two groups. Results are shown in Table 3. For the Total score, a significant interaction demonstrated that study abroad participants' scores changed differentially from pre-test to post-test compared to control students, and the main effect for time was also significant. For Stress Management and Self-Confidence, the main effects and interactions were all significant. For the Open-Mindedness and Foreign Language scales, the interaction effects were significant but there were no main effects; lower post-test control group scores balanced the increases in scores of study abroad students. International Career showed significantly different means over time without an interaction; both groups showed improvement in scores. New Experiences demonstrated neither a main effect nor an interaction, indicating that the average means did not differ significantly from pre-test to post-test and that neither group changed over the term of study. For every scale, scores averaged over the two time periods differed significantly between the groups.

Table 3

Results of Repeated Measures ANOVA for Total Score and Subscale Scores

Scale or subscale	Effect	F	Hypothesis df	Error df	Significance	Partial Eta Squared
Total Score	Main Effect	8.22	1	932	.004	.009
	Interaction	14.68	1	932	.000	.016
	Between Subjects	43.37	1	932	.000	.044
Stress Management	Main Effect	13.44	1	932	.000	.014
	Interaction	8.96	1	932	.003	.010
	Between Subjects	16.26	1	932	.000	.021
Self-Confidence	Main Effect	35.34	1	932	.000	.037
	Interaction	7.52	1	932	.006	.008
	Between Subjects	28.30	1	932	.000	.029
Open-Mindedness	Main Effect	2.49	1	932	.115	.003
	Interaction	8.60	1	932	.003	.009
	Between Subjects	9.86	1	932	.000	.020
Foreign Language	Main Effect	.22	1	932	.638	.000
	Interaction	13.25	1	932	.000	.014
	Between Subjects	8.54	1	932	.019	.006
International Career	Main Effect	9.79	1	932	.002	.010
	Interaction	1.36	1	932	.245	.001
	Between Subjects	13.88	1	932	.000	.015
New Experiences	Main Effect	1.56	1	917	.212	.002
	Interaction	1.49	1	917	.222	.002
	Between Subjects	63.37	1	917	.000	.065

Paired sample t-tests were used to assess differences over time within each group. Control students' Total scores did not change from pre-test to post-test while international study students' Total scores rose significantly. In terms of the individual factors, control group scores for Foreign Language actually decreased significantly, while study abroad students' scores increased significantly for all factors except New Experiences. Effect sizes in terms of Cohen's *d* are usually interpreted as small if they are below .3, medium at around .5, and large at around .8. As can be seen in Table 4, effect sizes for change within the control group from pre- to post-test were negligible, even though one factor score changed significantly. Within the international study group, effects were slightly larger though still small. Factor and Total scores for both groups at pre-test and post-test are shown with standard deviations in parentheses after each mean score. Significant changes within groups are noted by an asterisk (*).

Independent t-tests were conducted to investigate differences between the groups at pre-test and post-test. Table 5 shows factor and Total scores for the two groups at each time period. Significant differences between groups were evident at pre-test for all factors and the Total score except Foreign Language. All factors and the Total score were significantly higher at post-test for the study abroad group. For this table, Cohen's *d* is computed for the difference between the scores of the two groups at each time period. Effect sizes for differences between groups are much larger than those within groups, as might be anticipated. Figures 1 and 2 illustrate the pre-test and post-test differences within groups associated with Table 4, while Figures 3 and 4 illustrate the between-group differences associated with Table 5. Figure 5 shows both groups at pre- and post-test for comparison. Clearly, the groups are different at pre-test, particularly for New Experiences, Self-Confidence, and the Total score. However, the magnitude of difference between groups at post-test is greater than at pre-test for all pairs of scores.

Table 4

ISAS Mean Scores and Standard Deviations for Paired T-Tests with Control and Study Abroad Students

Group	New Experiences	International Career	Open-Mindedness	Stress Management	Foreign Language	Self-Confidence	Total Score
Control							
Pre-test	5.01 (.65)	3.80 (1.01)	4.76 (.62)	4.39 (.69)	4.75 (1.05)	3.62 (.87)	4.43 (.52)
Post-test	4.95 (.65)	3.81 (1.02)	4.73 (.60)	4.38 (.77)	*4.66 (1.04)	3.69 (.83)	4.41 (.54)
Cohen's <i>d</i>	-0.09	0.01	-0.05	-0.01	-0.09	0.08	-0.04
Study Abroad							
Pre-test	5.25 (.53)	3.96 (.85)	4.86 (.51)	4.51 (.63)	4.79 (.89)	3.85 (.86)	4.58 (.46)
Post-test	5.24 (.65)	*4.07 (.90)	*4.90 (.60)	*4.63 (.74)	*4.88 (.90)	*4.02 (.87)	*4.65 (.54)
Cohen's <i>d</i>	-0.02	0.13	0.07	0.17	0.10	0.20	0.14

Table 5

ISAS Mean Scores and Standard Deviations for Independent Group T-Tests for Control and Study Abroad Students

Group	New Experiences	International Career	Open-Mindedness	Stress Management	Foreign Language	Self-Confidence	Total Score
Pre-test							
Control	5.01 (.65)	3.80 (1.01)	4.76 (.62)	4.39 (.69)	4.75 (1.05)	3.62 (.87)	4.43 (.52)
Study Abroad	*5.25 (.53)	*3.96 (.85)	*4.86 (.51)	*4.51 (.63)	4.79 (.89)	*3.85 (.86)	*4.58 (.46)
Cohen's <i>d</i>	0.40	0.17	0.17	0.18	0.04	0.27	0.30
Post-test							
Control	4.95 (.65)	3.81 (1.02)	4.73 (.60)	4.38 (.77)	4.66 (1.04)	3.69 (.83)	4.41 (.54)
Study Abroad	*5.24 (.65)	*4.07 (.90)	*4.90 (.60)	*4.63 (.74)	*4.88 (.90)	*4.02 (.87)	*4.65 (.54)
Cohen's <i>d</i>	0.45	0.27	0.28	0.33	0.22	0.39	0.44

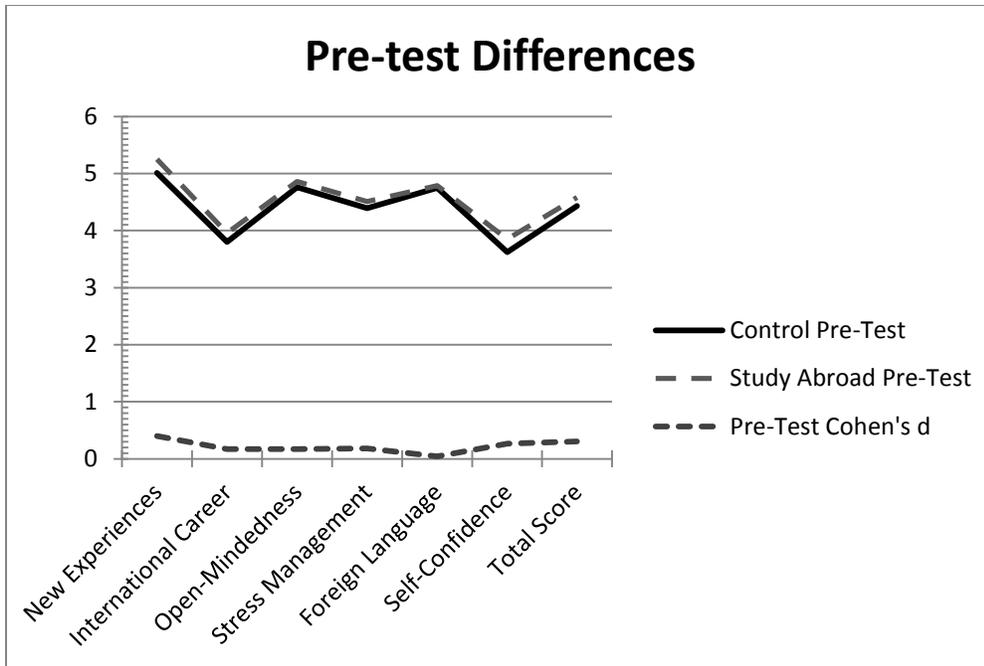


Figure 1

Pre-test Differences Between the Control and Study Abroad Groups

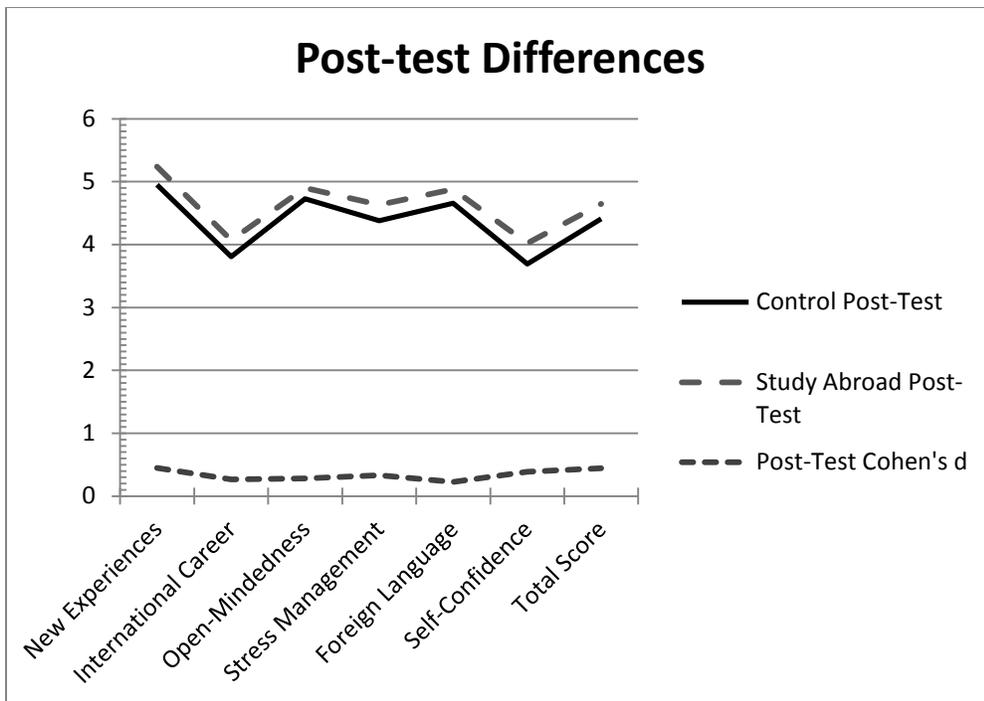


Figure 2

Post-test Differences Between the Control and Study Abroad Groups

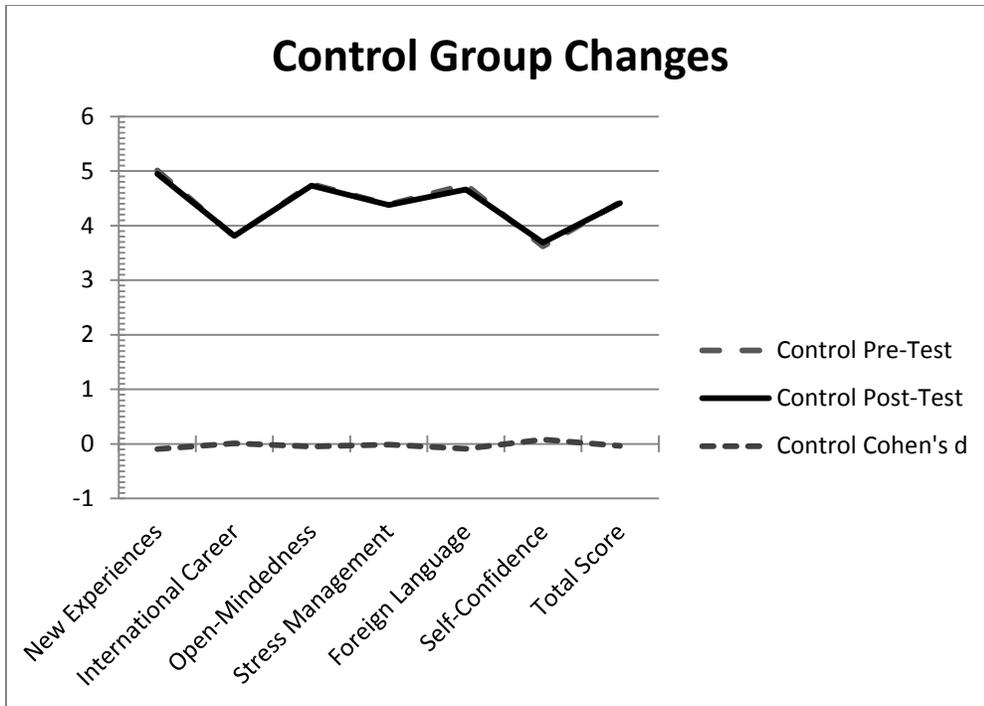


Figure 3

Changes in the Control Group From Pre-Test to Post-Test

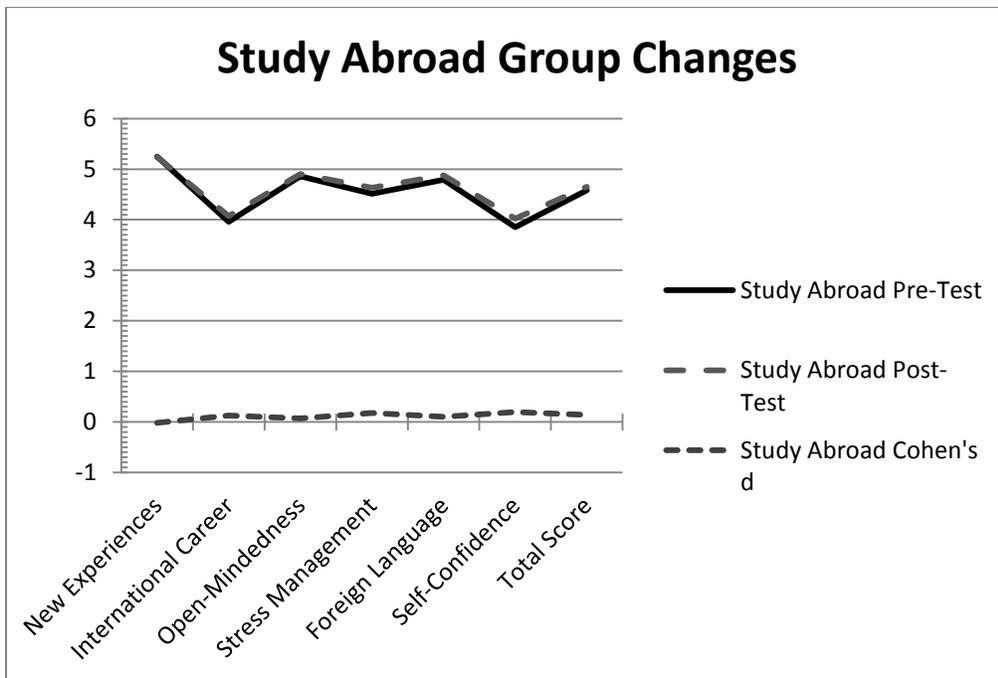


Figure 4

Changes in the Study Abroad Group From Pre-Test to Post-Test

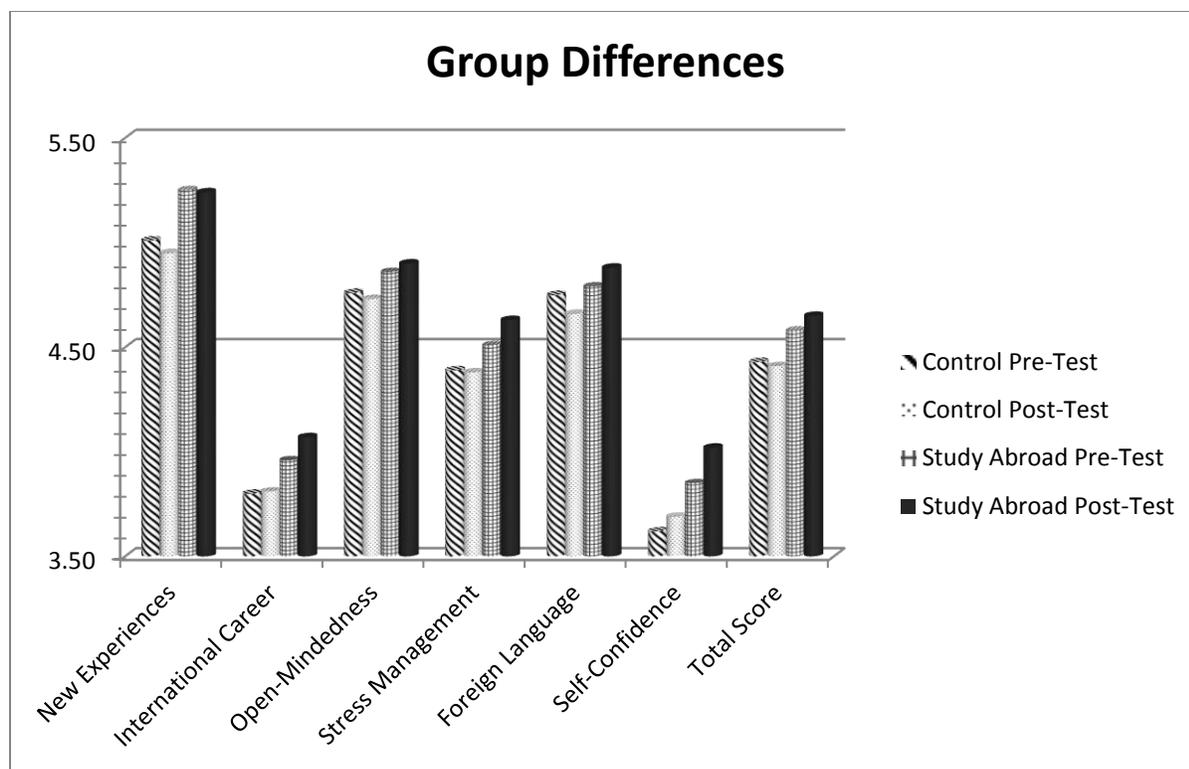


Figure 5

Control and Study Abroad Pre- and Post-Test Scores

Discussion

The repeated measures ANOVAs and t-tests within and between groups demonstrates that the ISAS measured constructs that changed for the international study group yet did not change for the control group for most of the ISAS factors and the Total score. Changes in ISAS scores reflect all the changes that occurred within this group of students that had an effect on their self-report of attitudes, whether those changes were due to their study abroad experience or not. With a large sample, however, greater justification can be made for the effects of the common factor of international educational experience. Even so, the changes within the study abroad group were generally quite small, possibly because the majority of study abroad participants attended a four-week summer session abroad. Foreign Language was the area that changed the most as a result of international education, from a non-significant to a significant difference with a small effect size. In

contrast, differences between the groups were significant even at pre-test. Most notably, the New Experiences factor, which measures adventurousness, showed large differences between groups though without change over time.

Students who choose to study internationally have different interests, preparation, and resources than students who do not. Control group members may have been students without the financial resources to contemplate studying internationally, students who had studied abroad previously or planned to do so in the future, students for whom a study abroad program did not enhance their degree programs, international students who were not interested in going to another country, or students who preferred to remain at home for any number of other reasons. Concluding that the study abroad program was the only differentiating feature between these groups would be unwarranted. Nevertheless, the magnitude of difference in attitudes at pre-test and post-test between the two groups may be interpreted as a measure of the effect of international education, particularly when post-test attitude differences are compared to smaller pre-test attitude differences.

Dissimilarities in terms of sex and ethnicity are provocative and suggest that the ISAS measures generalizable differences between groups apart from interest in international study. Previous travel experience and grade point average, on the other hand, have unsurprising outcomes in terms of higher self-report of attitudes. One stimulating finding was that encouragement had an apparent lack of effect on study abroad students. Study abroad students who reported that they were *not* encouraged by friends (the only significant group in terms of encouragement), along with those who reported that they had *no* encouragement, scored significantly higher on key variables than did students who were encouraged to study internationally. Perhaps encouragement “makes up the difference” for pre-travel attitudes in terms of making an international study experience a reasonable option. Put another way, students who have lower pre-travel attitudes require encouragement while

those without encouragement need stronger attitudes to choose a study abroad experience. In both of these cases, control and study abroad students who received encouragement had similar scores.

Conclusions

The ISAS has undergone data-based revision and repeated testing with large student samples to investigate item and scale properties. Factors are based on empirically supported theoretical constructs. Validity studies have confirmed the personality characteristics that are correlated with attitudes affected by study abroad and the relationship of the ISAS to a widely used commercial scale, the CCAI. In addition, the current study included both pre- and post-testing and a control group in order to isolate the effects of the study abroad experience. Unfortunately, like most educational studies, random assignment to groups was not possible, and significant differences between the control and study abroad groups at pre-test were unavoidable.

Unlike proprietary scales designed for use in the selection and training of expatriate managers, the ISAS was prepared to be used with students by college and university study abroad offices at no cost. It is brief and efficient and can easily be included in a packet of pre- and post-measures for the evaluation of student outcomes and program effectiveness.

The current study demonstrates that the ISAS is sensitive to pre-post differences for students who study internationally and distinguishes study abroad students from students who stay at home. Future research goals will include assessing students in study abroad programs in other parts of the world and for different lengths of time, as well as exploring the usefulness of the ISAS within the US as a measure of pre-travel attitudes.

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