

The mediating role of intercultural wonderment: connecting programmatic components to global outcomes in study abroad

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Abstract This study examines the mediating role of intercultural wonderment in relation to students' development of a global perspective. We utilize both confirmatory factor analysis and structural equation modeling to validate the intercultural wonderment construct and test the direct and indirect effects of the structural pathways in the model, respectively. Additionally, we highlight the relative and comparative effects of our model across cognitive, intrapersonal, and interpersonal dimensions of student development while also testing equivalent and nested models to rule out alternative and rival explanations. The results have broad implications for study abroad researchers and practitioners who are interested in developing a deeper understanding of how students learn and develop in study abroad contexts, while offering a more nuanced understanding of how experiential and constructivist practices influence student learning abroad.

Keywords Study abroad · Student development · Intercultural

Introduction

The proliferation of study abroad opportunities on college campuses has necessitated a deeper investigation of the myriad benefits derived from participation, particularly the ways in which different curricular, cocurricular, and community aspects of a study abroad experience foster a host of global learning and developmental outcomes. While the extant literature is replete with studies that demonstrate that students, on average, broaden their global perspective and intercultural competency over the course of a semester abroad (Engberg 2013; Vande Berg et al. 2012), less empirical attention has been placed on

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developing educational practice models that highlight the intrinsic features of a study abroad experience that are most influential in promoting intercultural learning. This may be partly due to the pervasiveness of the positive rhetoric surrounding the benefits of study abroad that is often accepted with little challenge or question (Twombly et al. 2012). Vande Berg et al. (2012) posit that student development in study abroad settings is not a derivative of “simple exposure to the environment”; rather, development is predicated on providing students with opportunities for “meaningful intercultural mentoring” and “reflection on meaning making” throughout their sojourn abroad (p. 21). It is within this experiential and constructivist vein that we examine and test a study abroad model of student development, demonstrating the inherent connectivity between intentionally designed study abroad environments and students’ development of a global perspective.

In building our educational practice model, we relied on the conceptual guidance provided by Paige and Vande Berg (2012) based on their thorough review of programmatic components that influence intercultural development. In particular, these scholars highlight factors related to mentoring, incorporating cultural content, reflecting on intercultural experiences, and engaging with the culture. Our previous work, however, has demonstrated that while these programmatic components are necessary in designing effective study abroad programs, they may not by themselves promote intercultural development (Engberg and Jourian in press). Rather, we posit that their influence on student development is mediated through a more complex process known as “intercultural wonderment,” a process that “encapsulates the underlying curiosity in individuals to seek out new and different experiences while studying abroad and involves a willingness and capacity to deal with discomfort and disequilibrium” (Engberg and Jourian in press, p. 3). Intercultural wonderment, therefore, offers a more complex and multifaceted understanding of the study abroad immersion process and serves as the connective tissue between intentionally structured programmatic components of the experience and students’ development of a global perspective.

The purpose of this study is to present and empirically validate an educational practice model that examines the mediating role of intercultural wonderment in relation to students’ development of a global perspective. In doing so, we utilize confirmatory factor analysis and structural equation modeling to validate the intercultural wonderment construct and test the direct and indirect effects of the structural pathways in the model, respectively. Additionally, we highlight the relative and comparative effects of our model across cognitive, intrapersonal, and interpersonal dimensions of student development while also testing equivalent and nested models to rule out alternative and rival explanations. We believe the results of this study will have broad implications for study abroad researchers and practitioners who are interested in developing a deeper understanding of how students learn and develop in study abroad contexts, while offering a more nuanced understanding of how experiential and constructivist practices influence student learning abroad.

Review of literature

In the review that follows, we first provide a brief overview of the conceptual underpinnings of intercultural wonderment. We then review the literature to support the educational practice model tested in this study (see Fig. 1). In particular, we examine how different programmatic components found in many study abroad programs influence the development of intercultural wonderment and concomitantly how intercultural wonderment fosters cognitive, intrapersonal, and interpersonal dimensions of global learning and development.

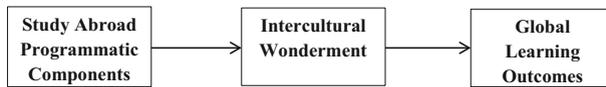


Fig. 1 Conceptual framework depicting the mediating role of intercultural wonderment

Intercultural wonderment

Intercultural wonderment provides a more nuanced understanding of intercultural immersion by examining the extent to which a study abroad program actively engages students with the host country and encourages them to step outside of their comfort zones (Engberg and Jourian in press). From a theoretical standpoint, intercultural wonderment incorporates the concepts of mindful wonderment (Lewis et al. 2010), mindfulness (Langer 1978), cognitive disequilibrium spawned through encounters with difference (Gurin et al. 2002), self-authorship and meaning making (Kegan 1994), and intercultural maturity (King and Baxter Magolda 2005). From an operational perspective, intercultural wonderment is a multifaceted construct that measures how often students intentionally push themselves outside of their comfort zones, immerse themselves in the culture of the host country, explore new habits and behaviors, and interact with residents of the host country outside of the classroom. Conceptually, intercultural wonderment is viewed as mediating the relationship between different programmatic components of a study abroad experience and outcomes that span cognitive, interpersonal, and intrapersonal dimensions of student development. In the following sections, we examine how different programmatic components of a study abroad experience promote intercultural wonderment and concomitantly how intercultural wonderment influences holistic student development.

Programmatic components that foster intercultural wonderment

The cultural environment experienced during study abroad provides students an opportunity to reflect on their home and host cultures. Such novel experiences can provide the type of interactions with others that interrupt otherwise familiar views and facilitate important attitudinal changes (Bowman and Brandenberger 2012). However, merely sending students abroad is a necessary but insufficient condition to produce educational outcomes. Numerous studies have shown the importance of the intentional design and facilitation of various activities inside and outside of the classroom in achieving developmental outcomes, including experiential activities such as service and fieldwork (Vande Berg et al. 2009); tasked interactions with host families, such as through ethnographic and oral interviews (Jessup-Anger 2008; Knight and Schmidt-Rinehart 2010); engaging in dialog and group projects with students from the host country (Jones et al. 2012; Knight and Schmidt-Rinehart 2010; Vande Berg et al. 2009); and utilizing the host country's language inside and outside of the classroom (Smith and Moreno-Lopez 2012).

Reflective activities and journals are critical pedagogical tools within study abroad (Jessup-Anger 2008; Vande Berg et al. 2009) and service-learning (Eyler and Giles 1999) contexts, where students interact across various types of difference while immersed. Meaningful reflection is necessary in developing a deeper understanding and application of the subject, more complex critical thinking and problem-solving abilities, openness to new ideas, and multiple interpretations of observations (Eyler and Giles 1999). Further, the disequilibrium resultant from novel cultural experiences necessitates structured

opportunities to reflect on experiential and affective dimensions (Bowman and Brandenberger 2012). Reflection can further elicit a commitment toward action and social change, particularly when connected to international service-learning projects and multicultural education (Smith and Moreno-Lopez 2012).

Taken together, these studies point to the critical role staff and faculty can play in the intentional design and implementation of curricular and cocurricular opportunities that meaningfully engage students with the community and the host language along with opportunities to reflect. By incorporating diverse perspectives and culturally relevant materials in the classroom (Ellwood 2011; Smith and Moreno-Lopez 2012), supporting and coaching students through their cultural adjustment (Paola and Lemmer 2013), and encouraging students to attend social events and excursions with host families and community members (Linder and McGaha 2013), faculty and staff can foster critical reflection of students' identities and understandings of the host culture (Ellwood 2011; Jones et al. 2012; Knight and Schmidt-Rinehart 2010).

Intercultural wonderment and global learning

The Association of American Colleges and Universities (AAC&U 2007) defines global learning in relation to students' gradual development of global knowledge, open-mindedness, and attentiveness in interacting across differences. Likewise, Chickering and Braskamp (2009) discuss the importance of internalizing a global perspective in college students' thinking, sense of self, and interactions with others. Researchers in psychology have further highlighted the affective, behavioral, and cognitive reactions that stem from cultural encounters, particularly in relation to acculturation processes (Savicki 2012). In these examples, and in previous models of intercultural maturity (King and Baxter Magolda 2005), global learning is understood through a holistic lens that spans cognitive, intrapersonal, and interpersonal dimensions of student development.

Global learning outcomes are achieved, in part, through deliberate experimentation and engagement with diverse communities (AAC&U 2007), which evokes the more complex and deeper levels of immersion embedded in our conceptualization of intercultural wonderment. Intercultural wonderment, for instance, encapsulates a number of "provocative moments" (Pizzolato 2005, p. 629) in which students are intentionally moving outside their comfort zones and exploring new relationships, contexts, values, and perspectives that concurrently trigger the disequilibrium needed to achieve self-authorship (Baxter Magolda 2008). Further, one's openness to and personal investment in cultural encounters can amplify creativity and challenge conformity to one's own cultural norms and ideas (Braskamp 2009; Leung and Chiu 2010).

When active experimentation, mindfulness, and personal investment are steeped within an intercultural context, students develop a greater capacity toward intercultural wonderment, which, in turn, can foster global learning and citizenship. Nussbaum (1997), for instance, describes how encountering "both sameness and difference" (p. 95) prepares students for global citizenship through the development of three sets of capacities: (1) critical thinking and critical self-examination, (2) seeing one's connection to others, and (3) empathy through narrative imagination, such as placing one's self in another's circumstance. Reaching outside of one's self with openness (i.e., via interactions and relationships with others) and reaching inward to reflect on those experiences with others underscore the role of identity and self-identification with others in developing global citizenship (Killick 2012).

Conceptual framework

Based on the literature explored in the previous section, we developed the following hypotheses to establish the mediating role of intercultural wonderment:

1. The study abroad programmatic measures will have direct effects on students' level of intercultural wonderment, but no direct effects on the outcome measures.
2. Intercultural wonderment will have a direct effect on students' outcome measures.

In the following section, we detail the ways in which we operationalized these measures and utilized structural equation modeling to test these hypothesized relationships.

Method

Data source and sample

We generated data for this study from the General (pretest) and Study Abroad (posttest) surveys administered through the Global Perspective Institute. Participating students completed the General survey prior to their one-semester study abroad program and completed the Study Abroad survey upon reentry. Both the General and Study Abroad surveys incorporate the Global Perspective Inventory (GPI), a set of 35 items designed to measure cognitive, intrapersonal, and interpersonal dimensions of global learning and development (Braskamp et al. 2013). In addition, the General survey contains a number of questions to measure students' level of engagement in the curriculum, cocurriculum, and campus community prior to their study abroad experience, whereas the Study Abroad survey ascertains students' experiences in the host country both inside and outside of the classroom.

Based on the 2012 administration of the GPI to students who studied abroad for one semester and completed both the General (pretest) and Study Abroad (posttest) surveys, we obtained an analytic sample of 510 students, which included students from 11 different US campuses (50 % of sample) and students who studied abroad through two different third-party study abroad providers (remaining 50 % of sample). The student sample consisted of primarily White (80 %) and female (71 %) students, with Students of Color representing 3 % Black, 5 % Hispanic, 3 % Asian, 6 % mixed race, and the remaining 3 % unknown. Further, the sample included sophomores (12 %), juniors (49 %), and seniors (39 %) representing majors in the Arts and Humanities (19 %), Business and Law (21 %), Social and Behavioral Sciences (19 %), and smaller percentages (<10 %) in other major disciplines. Approximately 86 % of the sample had never participated in a study abroad experience prior to the current study, and 79 % indicated that their parents' highest level of educational attainment was at the baccalaureate level or higher.

Measures

We utilized a subset of three latent constructs from the GPI to examine the mediating role of intercultural wonderment. The pretest and posttest scales represented exogenous and endogenous latent constructs in the structural models, respectively. The first scale, cognitive knowledge ($\alpha = .742$), included five different variables that assessed students' understanding of different cultures, international relations, and how to analyze the basic characteristics of a culture. The second scale, intrapersonal affect ($\alpha = .731$), measured students' affective

reactions in relation to cultural differences, including seven items based on students' acceptance of and openness toward difference, sensitivity toward discrimination, and emotional stability when confronted with differing perspectives. The final scale, interpersonal social responsibility ($\alpha = .717$), included five items that examined students' orientation toward giving back to society, consciously making a difference, and working for the rights of others.

In addition to the constructs noted above, we examined two additional latent constructs in the structural models. The first construct, intercultural wonderment (endogenous), included four items that measured how frequently students pushed themselves outside of their comfort zones, felt immersed in the host country, explored new habits and behaviors while studying abroad, and interacted with host members outside of the classroom. The second construct, developmental influence of faculty and staff (exogenous), was based on three items that measured staff interest in students' development, how faculty shaped students' understanding of the host country, and the strength of student–faculty relationships. Previous studies demonstrated acceptable reliabilities for both of these constructs (see Engberg & Jourian, *in press*). In addition to these constructs, we also incorporated three exogenous, observed variables that measured different components of the study abroad experience, including whether students spoke the host language inside/outside the classroom, whether class assignments included a reflective component, and whether field-based experiences were included that specifically brought students into the host community.

Data analysis

We used confirmatory factor analysis (CFA) and structural equation modeling (SEM) to examine the overall fit of the measurement and structural models, respectively, and more specifically to determine the mediating role of intercultural wonderment in connecting different components of a study abroad experience to the outcomes under investigation. SEM simultaneously examines a series of hypothesized relationships based on an estimated covariance/correlation matrix, while also generating a number of goodness-of-fit measures to evaluate the efficacy of a proposed conceptual model (Kline 2011). SEM provides several advantages over traditional regression and path analysis methods, including the assessment of overall fit and the ability to model measurement error to obtain more precise coefficient estimates. In this study, we relied on the NFI, NNFI, CFI, SRMR, and RMSEA indices to determine the overall model fit. Current standards suggest a good fitting model is associated with NFI, NNFI, and CFI values at or above .95 and SRMR and RMSEA values below .05 (Kenny 2014a).

We relied on the standard guidelines for modeling longitudinal data (Kline 2011), which included correlating the measurement error and imposing equality constraints on the factor loadings of each repeated measure (i.e., the three outcomes of the GPI). In addition, we correlated each of the exogenous variables in the model to account for the possibility of overlapping external influences. We also estimated the variances for each of the observed variables in the model as well as the errors and disturbances corresponding to each of the factor loadings and latent constructs, respectively.

In order to maintain the optimal observed variable-to-latent construct ratio (e.g., approximately three observed variables per latent construct; see Bagozzi and Heatherton 1994), we used item parceling for those constructs containing more than four observed variables (i.e., outcome variables in the study). Item parceling involves “summing or averaging together two or more items and using the results' sum or average as the basic unit of analysis” (Bandalos and Finney 2001, p. 269). Research on item parceling has shown that parcels are more reliable than individual items, have more definitive rotational results, and result in more stable parameter estimates (see Bandalos and Finney 2001;

Kishton and Widaman 1994). Although there are a number of ways to create item parcels, we relied on Kishton and Widaman's (1994) recommendations, including rerunning the reliability analysis with the newly formed parcels to ensure a similar level of internal consistency as the original factor structure.

In testing the mediation effects of intercultural wonderment, we relied on the general guidelines provided by Kenny (2014b) in meeting the conditions of mediation. While scholars have posited a number of conditions that must be met, the two most consistent conditions mentioned in the literature are as follows: a demonstration that the causal variable (i.e., study abroad measures) has a significant effect on the mediator (i.e., intercultural wonderment); and a demonstration that the mediator has a significant effect on the outcome variable. Additionally, when both the causal and mediator effects are entered simultaneously into a regression equation, the causal effects should no longer remain significant. While there are variations in the types of mediation present (i.e., full versus partial), most current techniques examine the magnitude and significance of the indirect effects in determining the extent of mediation, which is a common feature and rationale for using SEM.

Limitations

There are three notable limitations to the current study. First, the GPI, similar to other national assessment instruments used in higher education (e.g., NSSE and CIRP), relies on students' self-reported responses to measure different aspects of global learning and development. Researchers have noted that "self-assessments are credible and widely accepted methods of measuring educational outcomes" (Gurin et al. 2002, p. 349) and that the accuracy of self-reports must be understood in relation to the intended use of such information (McCormick and McClenney 2012). In particular, Gurin et al. (2002) note that previous researchers have demonstrated "similar substantive conclusions" (p. 349) when comparing self-reported learning assessments to GRE scores. The GPI has gone through extensive validity testing (e.g., test–retest, construct, and predictive validity) and demonstrated strong associations to global learning opportunities (Braskamp et al. 2013).

In addition to self-report, we recognize that the participating students in the study are not necessarily representative of all students who study abroad in a given year and that more rigorous testing is needed to make generalizations across all students and study abroad opportunities. Despite these threats to the external validity of the study, we believe the results from this study will lead to additional studies that examine a larger set of institutions and study abroad experiences.

Given the importance of model parsimony in employing SEM techniques, we made deliberate decisions about which variables and constructs to include in the conceptual model based on previous exploratory work and the study abroad literature. We recognize that additional components of a study abroad experience may also have conceptual relevance to our study, but we were limited by the available data on the survey and the model specifications that underlie the principles of SEM.

Results

In the section that follows, we first present the results of the measurement models across the three GPI outcomes. Next, we examine the full structural models followed by a brief presentation of the equivalent model findings.

Measurement models

Table 1 presents the results of the three measurement models. All of the associated fit and misfit indices were at the acceptable range, and with the exception of the NFI index, which is considered less reliable than other indices (see Kenny 2014a), all other indices indicated good fitting measurement models (NNFI and CFI > .95 and SRMR and RMSEA < .05). The freely estimated parameters in the measurement model (those not fixed to one) were all highly significant ($p < .001$), and all loadings were at or above .48. Table 1 also shows the amount of variance explained in each factor by its corresponding observed variable (R^2). Overall, the results of the measurement models confirmed the hypothesized factor structures across the exogenous and endogenous constructs in the model, providing an empirical justification to advance to the full structural models.

Structural models

Table 2 presents the results of the full structural equation modeling analyses, and Figs. 2, 3, and 4 show a graphical representation of the direct effects in each of the models. Given

Table 1 Standardized parameter estimates within the measurement models ($n = 510$)

Factor	Knowledge			Affect			Social responsibility		
	Loading	Error	R^2	Loading	Error	R^2	Loading	Error	R^2
<i>Pretest (T1)</i>									
V1. Parcel 1	.634	.773	.402	.642	.767	.412	.657	.754	.432
V2. Parcel 2	.736	.677	.542	.742	.671	.550	.634	.773	.402
V3. Parcel 3	.743	.669	.553	.574	.819	.330	.702	.712	.492
<i>Posttest (T2)</i>									
V11. Parcel 1	.651	.759	.424	.673	.740	.453	.712	.702	.507
V12. Parcel 2	.750	.662	.562	.756	.654	.572	.663	.749	.439
V13. Parcel 3	.707	.707	.500	.557	.831	.310	.729	.685	.531
<i>Influence faculty/staff</i>									
V4. Staff interest develop	.763	.647	.581	.766	.643	.586	.764	.645	.584
V5. Faculty interactions	.778	.629	.605	.776	.631	.602	.779	.627	.607
V6. Strong rel. faculty	.764	.645	.584	.763	.647	.581	.761	.649	.579
<i>Intercultural wonderment</i>									
V7. Comfort zone	.580	.814	.337	.585	.811	.342	.585	.811	.342
V8. Immersed	.771	.636	.595	.760	.650	.578	.776	.631	.601
V9. Explore new habits	.670	.743	.448	.674	.739	.454	.666	.746	.443
V10. Interact host outside	.496	.868	.246	.501	.865	.251	.489	.872	.240
<i>Fit/misfit indices</i>									
NFI	.940			.937			.941		
NNFI	.959			.957			.958		
CFI	.969			.968			.968		
SRMR	.043			.040			.039		
RMSEA	.044			.044			.046		

All freely estimated loadings were statistically significant at the $p < .001$. V3, V13, V6, and V10 were all fixed to one

Table 2 Direct and indirect parameter estimates within the structural models ($n = 510$)

	Knowledge			Affect			Social responsibility		
	<i>B</i>	SE	β	<i>B</i>	SE	β	<i>B</i>	SE	β
<i>Direct effect on</i>									
Posttest (T2)									
Pretest (T1)	.460	.046	.526***	.483	.052	.507***	.838	.053	.803***
Influence faculty/ staff	.046	.027	.095	-.006	.020	-.017	-.030	.026	-.053
Assign involve community	.011	.014	.039	.007	.011	.031	-.006	.014	-.019
Class reflective activities	.006	.018	.017	.016	.014	.056	.029	.018	.068
Spoke host lang in/ out	-.104	.014	-.045	-.012	.010	-.052	-.009	.013	-.027
Intercultural wonderment	.209	.049	.269***	.249	.043	.418***	.175	.048	.195***
Intercultural Wonderment									
Pretest (T1)	.088	.062	.078	.232	.093	.146*	.166	.069	.142*
Influence faculty/ staff	.138	.039	.219***	.135	.038	.213***	.129	.038	.206***
Assign involve community	.066	.020	.174***	.063	.020	.167**	.055	.020	.148**
Class reflective activities	.074	.026	.158**	.078	.026	.163**	.075	.026	.160**
Spoke host lang in/ out	.059	.019	.151**	.055	.019	.140**	.059	.019	.153**
<i>Indirect effects on</i>									
Posttest (T2)									
Pretest (T1)	.018	.013	.021	.058	.023	.061*	.029	.012	.028*
Influence faculty/ staff	.029	.010	.059**	.034	.011	.089**	.022	.009	.040*
Assign involve community	.014	.005	.047**	.016	.005	.070**	.010	.004	.029*
Class reflective activities	.016	.006	.042*	.019	.007	.068**	.013	.006	.031*
Spoke host lang in/ out	.012	.005	.041**	.014	.005	.058**	.010	.004	.030*
Fit/misfit indices									
NFI	.928			.931			.937		
NNFI	.951			.957			.961		
CFI	.965			.970			.972		
SRMR	.040			.035			.037		
RMSEA	.041			.037			.038		

* $p < .05$; ** $p < .01$; *** $p < .001$

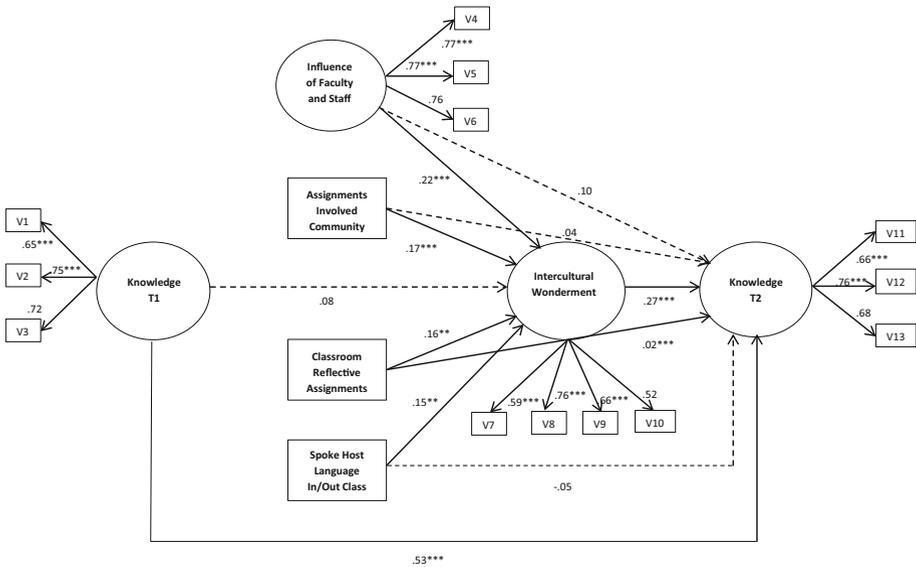


Fig. 2 Summary of the standardized path coefficients for the full structural model: χ^2 (85, $n = 510$) = 157.64, NFI = .93, NNFI = .95, CFI = .97, SRMR = .04, and RMSEA = .04. Significant levels are indicated by the following: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Insignificant paths are indicated with *dashed line*. The following factor loadings were set to one: V3, V6, V10, and V13. Covariances, error terms, and disturbances are not shown in the model

the general consistency of effects across the knowledge, affect, and social responsibility models, we begin with a general discussion of the findings but also highlight comparative effects across the three models.

Across the knowledge, affect, and social responsibility models, the various fit and misfit indices indicated good fitting models. With the exception of the NFI index, which was just below the good fitting demarcation, all of the remaining fit indices were above .95 and all of the misfit indices were below .05. We also examined the χ^2/df ratio across the three models, as opposed to the simple Chi-square statistic which is more prone to sample size bias, and determined that the ratio was below two for all models, which is below the suggested ratio of three for a good fitting model.

Examining the unstandardized coefficients within each model, we found two consistent direct effects on the posttest constructs across all three models. First, as hypothesized, we found a highly significant direct effect ($p < .001$) for intercultural wonderment in relation to students' posttest scores on the knowledge, affect, and social responsibility outcomes. The strongest effect was found on the affect model ($B = .249$), followed by the knowledge ($B = .209$) and social responsibility ($B = .175$) models. We also uncovered highly significant direct effects ($p < .001$) in relation to each of the associated pretest constructs, with the strongest effect found on the social responsibility pretest construct ($B = .838$). It should also be noted that the pretest constructs represented the strongest direct effects in all three models when examining the standardized beta coefficients within each model. Finally, we did not uncover any direct effects associated with the different study abroad measures tested in the models. Thus, in testing the mediation effect of intercultural wonderment, we met the first condition in which the mediator (intercultural wonderment)

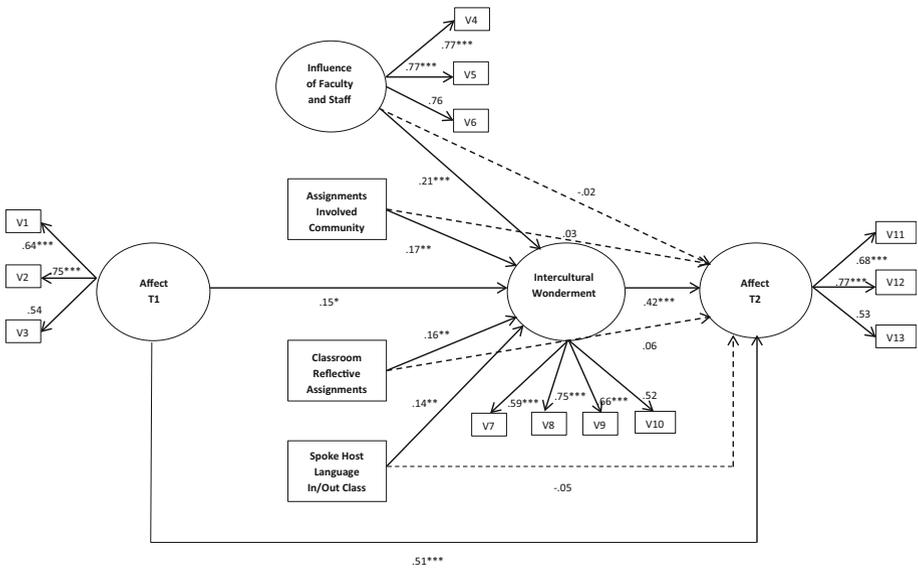


Fig. 3 Summary of the standardized path coefficients for the full structural model: χ^2 (85, $n = 510$) = 144.37, NFI = .93, NNFI = .96, CFI = .97, SRMR = .04, and RMSEA = .04. Significant levels are indicated by the following: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Insignificant paths are indicated with *dashed line*. The following factor loadings were set to one: V3, V6, V10, and V13. Covariances, error terms, and disturbances are not shown in the model

demonstrated a significant relationship to the outcome variable, while also demonstrating the absence of a direct effect in relation to other study abroad measures.

When examining the direct effects of the pretest and study abroad measures on intercultural wonderment, we uncovered consistent effects across all of the study abroad measures, although the significance level varied somewhat across models. The strongest direct effect in all three models was associated with the developmental influence of faculty and staff, which was strongest in the knowledge model ($B = .138, p < .001$). Similarly, students who were in courses that included class assignments involving field work in the host community were associated with significant direct effects on intercultural wonderment across all three models; the strongest effect was uncovered in the knowledge model ($B = .066, p < .001$). We also discovered consistent and significant direct effects on intercultural wonderment in relation to classroom activities with reflective components and speaking the host language inside and outside of the classroom across all three models. We did not, however, find a significant direct effect on intercultural wonderment in relation to the knowledge pretest, although we did find significant effects for the affect ($B = .232, p < .05$) and social responsibility ($B = .166, p < .05$) pretest measures. When looking at the standardized coefficients within models, the influence of faculty and staff was the strongest relative effect across all three models and the associated pretest variable was the weakest effect in the knowledge and social responsibility models. In general, these results support the second condition in determining the mediating role of intercultural wonderment, as all of the study abroad measures produced significant direct effects on intercultural wonderment.

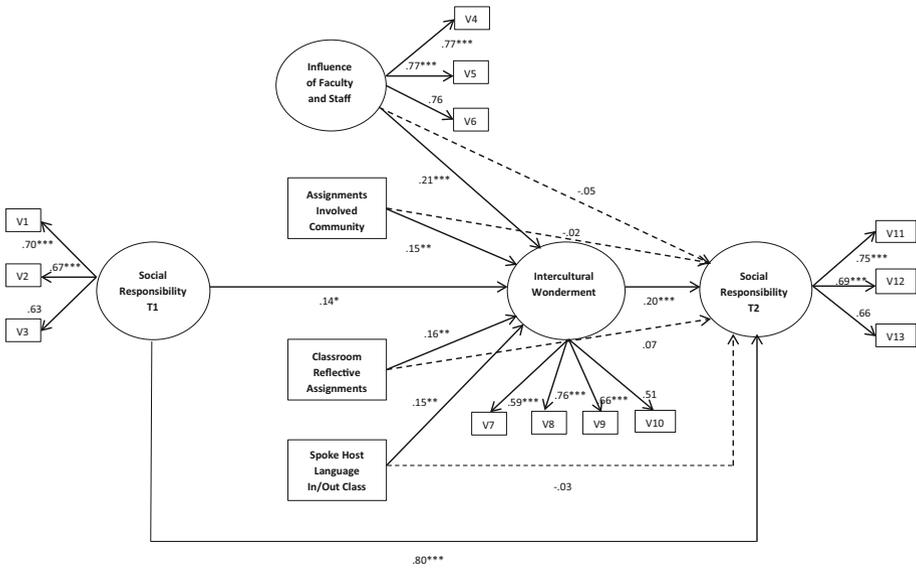


Fig. 4 Summary of the standardized path coefficients for the full structural model: χ^2 (85, $n = 510$) = 147.10, NFI = .94, NNFI = .96, CFI = .97, SRMR = .04, and RMSEA = .04. Significant levels are indicated by the following: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Insignificant paths are indicated with *dashed line*. The following factor loadings were set to one: V3, V6, V10, and V13. Covariances, error terms, and disturbances are not shown in the model

The final step in understanding the mediating role of intercultural wonderment involved examining the indirect effects of the different study abroad measures on the three different outcomes measures. While the level of significance ranged across models, we did uncover a significant indirect effect for all of the study abroad measures included in the study. The strongest indirect effect was the developmental influence of faculty and staff, which was most pronounced in the affect model ($B = .034, p < .01$) and least pronounced in the social responsibility model ($B = .022, p < .05$). The weakest indirect effect was how often students spoke the host language inside and outside the classroom, with the smallest effect found in the social responsibility model ($B = .010, p < .05$) and the largest effect found in the affect model ($B = .014, p < .01$). Similar to the direct findings on intercultural wonderment, we only uncovered indirect effects on the outcome measures in relation to their corresponding pretest measures in the affect ($B = .058, p < .05$) and social responsibility models ($B = .029, p < .05$).

Thus, we have demonstrated that the study abroad measures modeled in this study exert significant change in the different outcomes only when mediated by students' levels of intercultural wonderment. This suggests that the impact of different study abroad experiences on global learning and development is contingent on the extent to which these experiences foster a greater proclivity in students to step outside their comfort zones, feel immersed in the host country, explore new habits and behaviors, and interact with host members outside of the classroom.

Equivalent and nested models

As a final step in the SEM process, we examined equivalent and nested models in order to rule out rival explanations in relation to the mediating role of intercultural wonderment. In

particular, we tested the following models: (1) We reversed the mediating role of intercultural wonderment (testing whether the effects of intercultural wonderment were mediated by the different study abroad measures); (2) we removed the mediating role of intercultural wonderment (examining the direct effects of the study abroad measures); and (3) we removed the direct effects of the study abroad measures on the outcomes (testing a nested model in which we only accounted for the indirect effects of the study abroad measures). Given that results were consistent across all three outcomes, we only present the results of the knowledge models.

In the first case, when reversing the mediating pathways, we noted a larger Chi-square value and weaker fit and misfit indices compared to the proposed conceptual models: (χ^2 (92) = 231.445; NNI = .894; NNFI = .912; CFI = .933; SRMR = .055; RMSEA = .055). In the second case, when removing the mediating effect of intercultural wonderment, we found higher Chi-square values and an attenuation of the fit and misfit indices: (χ^2 (89) = 236.094; NNI = .892; NNFI = .904; CFI = .929; SRMR = .084; RMSEA = .057). In the final case, when we removed the direct pathways connecting the study abroad measures to the outcomes, we uncovered a slight degradation in the fit indices compared to the proposed conceptual models: (χ^2 (89) = 163.456; NNI = .925; NNFI = .952; CFI = .964; SRMR = .043; RMSEA = .041). We believe this further testing confirms the conceptual relevance of the models tested in this study and the role of intercultural wonderment in mediating the effects of different study abroad programmatic components.

Discussion

Despite the increasing emphasis placed on study abroad at colleges and universities, questions remain as to what students actually learn during such an experience and what makes one program potentially more successful than another (Vande Berg et al. 2012). In response to these questions, we proposed an educational practice model that incorporated constructivist and experiential practices shown to be effective in promoting intercultural outcomes (Paige and Vande Berg 2012). We posited that learning from study abroad experiences was a derivative of intercultural wonderment, a construct that encapsulates a more intentional form of immersion in which students actively seek new experiences and push themselves outside of their comfort. The results from this study suggest that intercultural wonderment acts as an important mediator between the programmatic components of a study abroad experience and cognitive, intrapersonal, and interpersonal dimensions of student development.

We began the study by using confirmatory factor analytic procedures to examine the measurement model embedded within our educational practice model. The results indicated that the underlying latent constructs demonstrated a good fit with the data, substantiating the construct validity of the intercultural wonderment measure, which had previously been tested through exploratory factor analytic procedures (Engberg and Jourian in press). In particular, the intercultural wonderment construct provides a more nuanced and complex way to understand cultural immersion and addresses earlier critiques that merely attending a study program (i.e., “simple exposure to the environment”; Vande Berg et al. 2012, p. 21) is sufficient in realizing intercultural gains.

The three educational practice models in this study demonstrated a good fit with the data based on numerous fit and misfit indices, suggesting that the hypothesized structural

pathways were acceptable representations of how students translate programmatic opportunities into realized gains in their development of a global perspective. Further, when testing both equivalent and nested models to rule out alternative or rival explanations (i.e., removing structural pathways or changing the directions of the effects), we found that our proposed educational practice model demonstrated the strongest overall fit with the data. This was an important finding and contribution of the study, particularly in providing researchers and educators a more nuanced understanding of what happens within the context of a study abroad experience, and moving beyond a singular focus on pretest–posttest change over time, which has been a prominent design feature of many previous studies (see Vande Berg et al. 2012).

In examining the different effects in our models, we noted the absence of any direct effects in relation to the four programmatic components (i.e., faculty and staff support, reflective activities, fieldwork involving the host community, and speaking the language inside/outside the classroom) and the knowledge, affect, and social responsibility outcomes. This is a particularly salient finding, especially given the prior empirical work identifying these programmatic components as “some of the most important lessons learned from the literature” (Vande Berg et al. 2012, p. 53). Much of this literature, however, incorporates an *implied* connection between these components and student learning based on significant pretest–posttest changes in different intercultural outcomes. Our study does not contradict these assertions; rather, we found that the connection between these programmatic components and outcomes is more nuanced and that the ways in which these components influence global learning is more indirectly experienced in relation to their effects on intercultural wonderment.

Although the programmatic components in the educational practice model did not demonstrate direct effects on the global perspective outcomes, each exerted a significant, direct effect on students’ intercultural wonderment. These findings highlight the important role of faculty and staff in facilitating intercultural wonderment, particularly in providing students the level of support and challenge necessary when confronting novel situations that may initially cause discomfort (Pizzolato 2005). Likewise, the use of reflective activities and field-based assignments involving the host community can foster a deeper level of immersion for students as they learn to make meaning of their experiences while abroad (Jessup-Anger 2008; Jones et al. 2012). Such assignments may also provide a catalyst for students to further explore and interact with members of the host country, and this may be amplified when students are able to navigate more readily the language of the host country.

In addition to the direct effects of different programmatic components on intercultural wonderment, we uncovered significant direct effects of intercultural wonderment on each of the global perspective outcomes. These findings resonate with the AAC&Us (2007) contention that cultivating the types of exploration and engagement embedded within our conceptualization of intercultural wonderment can translate into a host of different global outcomes. Deeper levels of engagement and immersion in the host country seem particularly influential in fostering students’ affective reactions toward cultural differences, which is supported by previous research investigating the reduction of intergroup bias (Dovidio et al. 2004). Taken together, the findings suggest that while exposure to different programmatic components is necessary for learning and development, examining only these components is insufficient in explaining *how* these components translate into developmental gains during a study abroad experience.

Implications

One of the important implications from this study is the need for intentionality when designing the programmatic components of a study abroad experience. This is particularly salient given the findings from this study, especially when considering the indirect relationship uncovered between different programmatic components and students' development of a global perspective. In this regard, it is critical for study abroad educators and practitioners not only to consider the importance of a specific component in relation to an anticipated outcome of the experience, but also to examine the potential impact of different practices on students' intercultural wonderment.

A well-designed field-based or service-learning component, for instance, can foster intercultural wonderment by providing students with opportunities to meaningfully engage with the host community and experience the dissonance that has been shown to stimulate growth and development. Merely incorporating a field-based or service-learning component without attention to other programmatic elements, particularly reflection, may yield unintended effects that attenuate the potential for learning. Service-learning experiences, for instance, do not always attend to the power and privilege dynamics that exist between those serving and those being served, inducing a dependency that may be more harmful than helpful (Baker-Boosamra et al. 2006). Thus, we recommend that field-based and service-learning components are designed and carried out with intentionality and care, purposefully building equitable partnerships and relationships between the study abroad program and stakeholders within the host community.

Faculty and staff also play a vital role in fostering intercultural wonderment, especially in supporting students as they adjust to a new environment and challenging them to take initiative in interacting with members of the host country outside of the classroom and exploring new habits and behaviors. This implies that faculty and staff need to be well versed in facilitating multicultural learning communities and assessing students' developmental needs. Ideally such skill development should be incorporated into pre-departure trainings for staff and faculty, or by recruiting those on the home campus that excel in these areas. Where possible, faculty and staff that are fluent in or willing to learn the host community's language would be ideally suited for such roles.

This study also illuminates aspects of the study abroad program that merit attention during the assessment and evaluation phases of the program. In particular, we see value in assessing intercultural wonderment throughout students' time abroad. As students are provided with opportunities to formally or informally share their experiences, questions should be directed toward specific experiences that may have pushed students outside of their comfort zones or led to the discovery of something new about themselves based on their interactions or explorations in the host country. As so much of intercultural wonderment is influenced by the relationships among students, staff, faculty, and the community, it would also be educative to seek the perspectives of more than just students in that equation. Faculty and staff can further highlight what programmatic components they saw students actively engage with or talk about, and in what aspects of their duties they felt they needed additional training and resources to be better prepared. Finally, input from host community members and stakeholders should be sought to determine the impact of activities such as service learning on the community itself, and whether and how those partnerships should continue.

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