

# Intergroup Contact Fosters Intercultural Competence among Global Service-Learners through Appreciation of Differences and Awareness of Structural Inequalities

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## Abstract

*Global service-learning fosters intercultural competence development. This study was grounded in the intergroup contact theory, which explains the causes of bias against one another and how intergroup contact helps negate those perceptions. We employed a comparative census between alumni of Iowa State University (ISU) and Makerere University (MAK) who participated in the summer school garden service-learning program, 2006–2019 through the Center for Sustainable Rural Livelihoods in Uganda. The study examined how alumni's intercultural aspects changed as measured by self-perceived appreciation of differences (SAD) and awareness of structural inequalities (ASI). A self-administered questionnaire was sent to 274 alumni through Qualtrics where 94.2% responded. We found that ISU alumni had greater changes in their knowledge, attitudes, and awareness about intercultural aspects than MAK alumni. The diversity constructs of race, ethnicity, and gender accounted for differences whereby white and female ISU alumni had greater changes in their intercultural competence than alumni of color and males respectively. Also, binational housing influenced the differences, implying that service-learning programs should promote cross-cultural binational living arrangements for students. Intergroup contact through SAD can reduce cultural distance and ASI can foster alumni philanthropy, contributing to solving complex community problems such as undernutrition and illiteracy through school gardens. Global service-learning programs require faculty familiar with challenges in international education and culture of communities with which students conduct their service-learning. Faculty should facilitate pre-departure orientations to minimize students' cultural shock during immersion in new communities and should also assist in post-service-learning program reflections to minimize reverse culture shocks.*

## Introduction

In a multicultural learning environment, stressing the relevance of cultural identifiers such as race, ethnicity, and gender in global education programs help to meet the needs of diverse students (Diao & Wang, 2021; Donahue & Wise, 2021; Goldoni & Rusnak, 2024; Foley & Hannaford, 2024; Michl et al.,

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2025; Mitchell & Donahue, 2023; Pusch & Merrill, 2023). Race is defined in this study as phenotypic traits such as skin color, hair type, face and skull shape, and genetic ancestry [e.g., Africans, Caucasians, or Asians] (Santos et al., 2010, p. 121). Ethnicity encompasses the study of “cultural factors such as nationality, tribal affiliation ... and traditions of a particular group” (p. 121). Ethnicity and race have a profound influence on students’ decisions for placement and perception of duties within the service-learning environment. Different studies have shown that students of color and white students differ in how they experience their service-learning (Foley & Hannaford, 2024; Mitchell & Donahue, 2023). The probable explanation was that white students in non-white communities go through stages while advancing their racial and ethnic identity development more than their counterparts of color who are found to identify easily with the non-white communities right from the beginning of their service-learning experiences. Although white students undergo identity development, students of color sometimes find themselves undergoing similar identity development when they cross international borders to communities of different ethnicities than theirs (Kasravi, 2023; Lott & Brundage, 2025).

Butin (2005) reports that there is a common supposition about ethnicity, race, and class concerning who *serves*, *gets served*, and *gets seen as productive* during service-learning experiences with communities. However, an ideal service-learner is “one who volunteers her time, has high cultural capital, and gains from contact with the other” (Butin, 2006, p. 481) which is empowered by having an intentional and transformative training curriculum (Nonnecke & Acker, 2019; Tapia, 2021). Such a curriculum incorporates learning paradigms that foster critical thinking and reasoning. It serves as an effective tool of critical reflection that questions students’ reciprocity of service and learning with communities, fosters comradeship, and develops positive identity development (Ash & Clayton, 2009; Ikendi, Retallick et al., 2023; Lorenzo et al., 2021). Programs must be intentional so that both service and learning occur in balance and have value for both the recipient communities and students. Multicultural service-learning fosters cumulative learning under reduced biases and promotes diversity in learning through various students’ experiences and critically reflects on such experiences as they provide a service and learn with communities. Service-learning is powerful tool of collaborative initiatives in higher education (Tapia, 2024; 2025).

Although multicultural service-learning programs emphasize the reduction of biases and promotion of intercultural learning, they often operate on a curriculum and structure focused on white and middle-class students only (Seider et al., 2013). This mode of operation may reinforce white privilege, a sign of an institutional mode of inequality that results in the perpetuation of negative beliefs among learners (Allen, 2021; Cruz-Feliciano, 2023; Halley et al., 2022; Nishimura & Yokote, 2020). Some researchers, including Dunlap et al. (2007) advocate for the creation of awareness to enable program facilitators to understand both benefits and caution and to take preventive actions against biases to ensure that learners enjoy their time during service-learning. Several studies call for critical reflections in the service-learning programs to foster critical thinking and reasoning among learners in their service-learning activities. These aspects provide avenues to develop solidarity and comradeship as students work *with* the communities and learn with them other than the converse of working *for* the communities (Bingle & Clayton, 2020; Grain et al., 2019; Ikendi, Retallick et al., 2023). Providing students with positive experience in their assignments to critically discuss issues related to race, ethnicity, equity, and power relations can potentially reduce perceptions of biases in service-learning experiences. Collaboration among diverse demographics of learners constitutes efforts where needs are met productively through dialogical, mutual seeking, and sharing of thoughts. The ability of educational programs, including global service-learning to reduce biases, rests on how they implement the *intergroup contact theory* in their program planning and operation (Conner & Erickson, 2017; Martín-Ondarza et al., 2022; Maxwell et al., 2023; Nagda & Gurin, 2023).

### Theoretical Framework

The intergroup contact theory (Allport, 1954) provided the theoretical grounding of this study. Allport argues that individuals of different socioeconomic backgrounds interact, and, in the process, they

tend to hold biases toward their peers and the community. The intergroup contact theory helps to explain how such individuals hold biases as well as how contact with one another helps to negate those perceptions. According to Allport, there are three most influential factors for the development of intergroup relations either positively or negatively and these include the individual status of those who are involved in contact, the nature of interactions, and the support of authorities. Allport adds that biases held by individuals over peers “may be reduced by equal status contact between majority and minority groups in the pursuit of common goals, [that is] sanctioned by institutional support” (p. 281). The three factors reinforce each other to yield successful intergroup interactions and build positive relationships, which is the overarching goal of humanity’s intergroup contact and building intercultural relations among global service-learners.

### **Individual Status**

In individual status, Allport (1954) suggests that members who are in intergroup contact be of equal status. Allport primarily posits his suggestion based on the disadvantaged group and argues that unless all members of the group are of equal status, there is a likelihood that holding biases of group members in the minority and, therefore, the majority groups will persevere and reinforce negative biases among members. Allport further suggests that educators can help intergroup members achieve equal status by allowing them to equally participate in the program activities including discussions, reflections, and decision-making, and facilitate equal resource allocation for a common goal. Other research revealed that service-learning programs are hard to achieve equal status among students of different cultures (Boyle-Baise & Langford, 2004; Sperling, 2007). They support the idea that the advantaged tend to serve the disadvantaged, creating an attitude of superiority, which escalates biases within groups of students. However, other researchers have shown that even though groups may differ in a larger setting, the programs’ specific designs can be worked on to establish the equal status of participants (Pettigrew & Tropp, 2006), for instance, working on binational team projects (Ikendi, Retallick et al., 2023). Conner and Erickson (2017) have suggested that in service-learning programs, with careful preparation, elaboration of context, and intergroup contact situation, there is a likelihood of equal status to be achieved.

### **Nature of Interaction**

This factor focuses on the intrinsic and extrinsic value in the quality and quantity of intergroup contact between and among members (Allport, 1954). The quantitative piece relates to the frequency and length of interaction and the number of group members with whom a member has interacted. The qualitative aspect focuses on authenticity, trustworthiness, and usefulness of the interactions rather than mock and trivial exchanges for a positive impact among members. Studies found that competition between groups, reinforced by a combination of histories of intergroup member conflicts and competition, led to biases among members (Bushina & Karimova, 2024; Constantin & Cuadrado, 2021; Guo et al., 2025). Intergroup conflict further results in other forms of biases such as devaluing other members in groups and consequently outright hostility. Higher education institutions implementing the service-learning pedagogy may be a disaster if the intergroup contact is superficial, short-term, and lacks deeper mutual interaction. For a reduction in biased thinking among members, Allport (1954) advocated for greater, genuine, intimate, and natural flows in conversations between and among group members who are different from themselves. Allport stressed that “it is not the mere fact of living together that is decisive. It is the form of resulting communication that matters” (p. 272). Proper orientation, reflections, and constructive communication processes are crucial in the development of intergroup dialogue among learners (Ikendi, 2025; Ikendi, Retallick et al., 2023; Maxwell et al., 2023; Nagda & Gurin, 2023). Programs are urged to promote positive competition among members that fosters a common goal for the groups and promotes closer interaction where members are enabled to build authentic relationships during their learning experiences.

## Support of Authorities

The support of authorities, according to Allport (1954) takes different forms, including laws, rules, regulations, customs as well as the local working atmosphere, all of which influences the success of intergroup interactions for mutual benefit. Colleges and universities have promoted moral education in a multicultural learning environment to prepare students to be good global citizens able to live in a multiethnic society (Bročić & Miles, 2021; Lamb et al., 2022; Lv et al., 2024). In global service-learning programs, the site (i.e., supervision, type of institution, academic instruction, thoroughness of reflection) and the role played by the immediate students' supervisors and administrators (i.e., supportive relationships) influence students' perceptions of their peers and the communities they get immersed in during experiential learning. In supporting intergroup relations, Gajda et al. (2022) indicate that it is not only dependent on the knowledge, skills, and desires of the teachers but also on the kind of environment that the school provides. Studies have found that whereas schools provide a conducive environment for intergroup interaction to foster the reduction of biases, external factors, including family setup where students come from interrupt the regular intergroup success at school (Nicoletti et al., 2022). In such scenarios, the social status of students is formed at home, including stereotyping, and these characters are carried to school. However, with strong support from the school administration, well-trained teachers can counteract such situations for the success of multicultural learning. Programs including service-learning, which have careful planning and implementation of intergroup contact, can reduce bias and allow students and communities to learn together effectively (Collopy et al., 2020; Conner & Erickson, 2017; Martín-Ondarza et al., 2022).

## Purpose and Objectives of the Study

Engaging students in multicultural global service-learning programs offers them memorable hands-on experiences to develop into interculturally competent global citizens. Of the United States students who study abroad, most study in Europe and few in Africa (Institute of International Education, 2024). There is limited evidence of how service-learning programs of binational teams from the United States and Sub-Saharan Africa enhance their intercultural competence while serving and learning about community development initiatives implemented in rural communities. This study operationalized the intergroup contact theory through intercultural competence development where members in contact interact while negotiating their cultural distinctiveness to understand and appreciate the similarities and differences of intergroup contact cultures. Measurement of alumni's intercultural competence development was based on two variables; 1) self-reported perceived appreciation of difference defined as the idea that you have about the kind of person you are (your identity) to the people in contact with during the global service-learning experience, and 2) self-reported perceived awareness of structural inequality defined as a system of privilege created by institutions within an economy (O'Grady, 2000). These variables were measured in terms of the degree of dis/agreement among alumni who reported that their knowledge, skills, abilities, awareness, and attitudes about intercultural issues changed because of participation in service-learning.

The study aligns with the national research agenda priority five of the American Association for Agriculture Education (AAAE) of promoting "efficient and effective agricultural education programs focusing on what methods, models, and programs are effective in preparing people to work in global agriculture and natural resources workforce" (Thoron et al., 2016, p. 43). It also aligns the AAAE research value on "implementing programming for international development initiatives" focusing on specific areas of "developing human capital across cultural and geographic boundaries" (AAAE, 2023, p. 13). The purpose of this study was to determine the impact of alumni's participation in a service-learning program in Uganda on their intercultural competence development. We examined how alumni from Iowa State University and Makerere University interacted as they worked *with* communities while negotiating their cultural distinctiveness and mitigating biases to ease their learning. This study had three specific objectives:

1. Determine if there are any differences between Iowa State University and Makerere University alumni, regarding changes in their skills, knowledge, attitudes, and awareness about intercultural issues, measured by their self-reported perceived appreciation of difference;
2. Explore the relationship between alumni's demographic characteristics and their self-reported perceived appreciation of difference; and
3. Examine differences between Iowa State University and Makerere University alumni in terms of changes in knowledge, skills, abilities, awareness, and attitudes about intercultural issues, measured by the self-reported perceived awareness of structural inequality.

### Methodology

This study was part of a larger research project where the researchers investigated the impact of a service-learning program on alumni's academic, professional skills, and intercultural competence development. Approval to conduct the study was sought from the IRB at ISU, which was granted as "Exempt" under IRB number 21-263-01. The study utilized an e-mail communication system through Qualtrics to collect data between February 7<sup>th</sup> through March 10<sup>th</sup> of 2022. An electronic survey method allows large amounts of data to be collected from dispersed populations such as global service-learning alumni who are spread overseas and increases the speed of obtaining results (Ary et al., 2019; Dillman et al., 2014). The respondents consisted of all the alumni of a summer service-learning program named *Creating a school garden* from Iowa State University (ISU) and Makerere University (MAK), which was started in 2006 (Nonnecke et al., 2015; Ikendi, Retallick et al., 2023). The alumni in this study were students who participated in and completed any of the summer service-learning semesters in any year between 2006 through 2019. The activities were completed in Uganda under the partnership of ISU and MAK as part of the education programs of the Center for Sustainable Rural Livelihoods (CSRL) programs to build the next generation of responsible global citizens (Nonnecke et al., 2015). The alumni were identified from the program's database with updated e-mail addresses from the Associate Director of Education Programs of CSRL. The total number of alumni was 291, including 166 from MAK and 125 from ISU.

### Instrumentation

The survey was designed on the guidelines of the Tailored Design Method (TDM) which enabled researchers to customize the survey mode to reduce errors, adopt multiple contacts, and focus content on research objectives to induce a positive social exchange (Dillman et al., 2014). This analysis focused on three sections of the main survey, including 1) introductory service-learning information, 2) intercultural competence questions, and 3) biographical information about the participants. In a total of nine questions, the survey tool captured all data for each objective in any and/or a combination of question styles – scale, multiple-choice, and dichotomous. The general information comprised of service-learning introductory information cut across all three objectives. As a breaker section, three questions were designed seeking information on, 1) the year participated; 2) the university; and 3) and year of study during service-learning. The intercultural competence section comprised two six-point Likert-scale type questions. These questions measured alumni's degree of dis/agreement that participation in service-learning developed their intercultural competence measured by 1) self-perceived appreciation of difference, and 2) awareness of structural inequality. The scale was composed of "1=Strongly Disagree through "6=Strongly Agree." The questions were developed with reference to different graduate theses and dissertations (see, Abel, 2011; Dallinger, 2015; Scott, 2011; Wilmarth, 2004), extensive review of literature, and from experiences of the author team in global education programs. In the background information, five multiple-choice questions were asked including gender; current education level; location of residence during service-learning; home residence as either urban, semi-urban, or rural; and ethnicity for ISU and ancestral region for MAK alumni. For ethnicity and ancestral regions, a skip logic in Qualtrics was activated where questions on ethnicity were displayed only for ISU, and ancestral regions displayed only for MAK alumni.

## Establishment of Validity of the Survey Instrument

Systematic and rigorous steps were followed in the design of the survey, to ensure that the final tool was valid and once deployed, ensure data collected were consistent with the objectives (Ary et al., 2019). The tool was reviewed by a team of 12 members with different experiences and specialties in higher education, global service-learning, and research methods. The review followed the authors designed panel of experts' guidelines aimed at identifying whether each item in the tool was: i) relevant to the objective of the study, ii) clear and concise, iii) not "multi-barreled", and iv) free of technical jargon. Each item in the evaluation guideline had a comment section and in general, final comments were submitted together with a summary indicating whether content, construct, and face validity, should be: i) retained as is, ii) modified and retained, and iii) deleted for each item in the survey tool. All items were modified and retained.

## Data Collection

Following Dillman et al. (2014) TDM, an invitation letter was sent on February 7<sup>th</sup>, 2022, to 291 in a single e-mail using a "blank carbon copy (BCC)" feature to protect the privacy of alumni emails. The letter stated the purpose and the importance of their participation. Seventeen emails were returned for wrong addresses and none of the remaining respondents opted out of the study. On February 9<sup>th</sup>, the initial link was sent through Qualtrics to the 274 alumni with a cover letter explaining the purpose of the research, a request for a timely response, and thanking them for their voluntary willingness to participate in the study. All sections were marked, and directions were provided on each section and question. A total of 150 (54.8%) of the participants completed the survey in the initial invitation. After 10 days, on February 18<sup>th</sup>, an e-mail was sent to 124 alumni to remind alumni about the survey sent earlier and that their responses were critical and 52 completed the survey in this reminder. A follow-up letter is one of the most effective ways to increase the return rate (Dillman et al., 2014). To engage with late respondents, a follow-up letter via Qualtrics and a link were sent to 72 alumni on February 28<sup>th</sup>, three weeks after the original survey to stimulate the revival of returns, and 40 completed the survey. On March 7<sup>th</sup>, a final email reminder was sent to 32 alumni who had not completed the survey, and 16 completed the survey. Data collection lasted for 30 days and was closed on March 10<sup>th</sup> with an overall response rate of 94.2% ( $n=274$ ), with MAK alumni at 95.6% ( $n=158$ ), and ISU alumni at 92.2% ( $n=116$ ). A post-survey reliability assessment was done using Cronbach's alpha to establish the internal consistency of the collected data. The recommended alpha value is 0.70 (McNeish, 2018). The alpha value on self-reported perceived appreciation of differences (SAD) was .942 for 23 Likert items with 223 (88.5%) usable responses, and self-reported perceived awareness of structural inequality (ASI) was .922 for 19 Likert items with 231 (91.7%) usable responses, with both variables indicating a strong internal consistency.

## Data Analysis and Presentation

Data were exported from Qualtrics to Excel for cleaning, reorganization, and categorization of variables, after which data were transferred to IBM-SPSS 28 statistical software for analysis. Data are presented focusing on individual objectives in this study. The intercultural competence constructs of SAD and ASI were analyzed using an independent sample *t*-test to determine if there existed significant differences among the alumni from ISU and MAK on how service-learning influenced their intercultural competence development in those constructs. These analyses were based on a composite sum of the Likert scales on each construct and the individual items. The results are presented in a tabular form showing a column comparison between ISU and MAK alumni based on their mean (*M*) and standard deviation (*SD*); overall *t*-statistic (*t*), *p*-value, and Cohen's (*d*) to measure the effect size on significant differences (Cohen, 1988). To explain the relationship between the demographic characteristics of alumni and SAD, a hypothesis was set: there are no differences in alumni SAD based on their demographic characteristics. A one-way ANOVA and *Tukey's post hoc* analysis were performed to determine the differences between ISU and MAK alumni. Data are presented in tabular form with columns for comparison between the groups.

## Findings

The findings of the study are explained based on the stated objective and their deeper theorization with literature is embedded in the discussion sections.

### Self-perceived Appreciation of Differences Between the Iowa State University (ISU) and Makerere University (MAK) Service-Learning Alumni

The first objective of this study sought to determine if there are any differences between ISU and MAK alumni in terms of changes in knowledge, skills, abilities, awareness, and attitudes about intercultural issues as measured by the self-perceived appreciation of difference (SAD). An independent sample *t*-test was performed to determine the differences, and Levene's Test for Equality of variances showed no violation of the assumption of equality of means ( $p = 0.097$ ). The combined complete responses were 223 (ISU,  $n = 93$ , MAK,  $n = 130$ ). The results indicated that ISU alumni had higher changes in their intercultural competence on the construct of SAD ( $M = 5.06$ ,  $SD = .605$ ) than MAK alumni ( $M = 4.87$ ,  $SD = .794$ );  $t(221) = 1.966$ ,  $p = .097$ , Cohen's  $d = 0.27$  (small effect size). Overall, the mean values for ISU alumni were high for most of the SAD Likert items, and 16 of the 23 items (Table 1) were within the scale of 5.0 (agree) to 6.0 (strongly agree). Statistically, six items revealed significant differences showing that ISU alumni had higher mean differences than MAK alumni on the SAD construct of intercultural competence development because of alumni participating in the service-learning program. The six items that showed statistically significant differences are illustrated with their respective effect size (Cohen's  $d$  statistic).

**Table 1**

*Differences in Intercultural Competence Measured by Self-perceived Appreciation of Differences Between the Service-Learning Alumni from Iowa State University and Makerere University.*

Participation in service-learning helped me to ...	Iowa State Univ.			Makerere Univ.			Statistic		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>t</i>	<i>d</i>
Develop the ability to work in changing cultural environments.	101	5.50	.626	147	5.33	1.008	.007	1.493	.20 <sup>s</sup>
Develop the ability to work well with people of different ethnicities.	102	5.39	.834	147	5.16	1.288	.092	1.579	
Interact with students of different ethnicities.	102	5.38	.732	148	5.16	1.048	.333	1.892	
Develop an open mind to new ideas from a variety of people.	100	5.37	.661	147	5.27	.797	.618	1.084	
Develop a willingness to seek out new experiences from people of different ethnicities.	102	5.36	.806	148	5.10	1.055	.840	2.114	
Form positive views of poor socioeconomic class children I worked with in the field.	101	5.27	.926	147	5.01	1.047	.670	1.964	
Understand myself, my identity, and reflect on my behaviors and actions.	101	5.25	.853	147	4.93	.853	.973	2.393	
Understand people from different ethnicities than mine in the field.	102	5.24	.747	149	4.95	1.002	.796	2.421	
Interact with students of a different race than mine in the field.	102	5.23	.932	149	5.30	.874	.373	-.605	
Develop ability to foster shared vision	101	5.22	.808	147	5.26	.937	.786	-.355	
Improve my respect for the opinions of my peers.	100	5.21	.782	149	5.20	.877	.677	.080	

Participation in service-learning helped me to ...	Iowa State Univ.			Makerere Univ.			Statistic		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>t</i>	<i>d</i>
Form positive views of poor socioeconomic class families where children I worked with came from.	102	5.21	.948	146	4.99	1.145	.860	1.593	
Interact with farmers of different ethnicities.	102	5.19	.841	147	4.70	1.367	.001	3.192	.43 <sup>S</sup>
Form positive view of poor socioeconomic class of communities where the children I worked with came from.	102	5.18	.938	146	4.97	1.063	.914	1.559	
Interact with farmers of different races	102	5.10	.939	148	4.33	1.635	<.001	4.276	.58 <sup>M</sup>
Enhance my honesty, openness, and self-respect to peers.	102	5.07	.904	147	5.02	1.119	.509	.361	
Understand how your ethnicity shapes your identity in communities.	102	4.90	1.058	148	4.49	1.232	.154	2.774	
Understand how your race shapes your identity in communities.	101	4.89	1.148	145	4.57	1.284	.458	1.999	
Interact with people of different religions.	102	4.83	.891	147	4.78	1.339	.025	.381	.04 <sup>T</sup>
Interact with people of a different political realm.	102	4.82	.916	149	4.46	1.388	.001	2.301	.32 <sup>S</sup>
Develop a positive attitude toward peers of different ethnicities.	100	4.63	1.169	147	4.54	1.273	.918	.580	
Develop a positive attitude toward peers from lower socioeconomic families that I worked with.	101	4.61	1.200	149	4.43	1.503	.022	1.030	.13 <sup>T</sup>
Develop a positive attitude toward peers from higher socioeconomic families that I worked with.	100	4.01	1.235	147	4.46	1.376	.107	-2.643	

Note. Cohen's *d* depicts the effect size: <sup>T</sup>=Trivial, <sup>S</sup>=Small, <sup>M</sup>=Medium.

Scale for Appreciation of Differences: 1=Strongly disagree through 6=Strongly agree.

### Relationship Between Iowa State University (ISU) and Makerere University (MAK) Alumni's Demographic Characteristics and Their Self-perceived Appreciation of Differences (SAD)

To explain the relationship and differences between the demographic characteristics of ISU and MAK alumni and their SAD for objective two of the study, a one-way ANOVA and *Tukey's post hoc* analysis were run. The demographic characteristics were: year of study, gender, residence during service-learning, current education level, the place where they grew up, and year of service-learning. Results (Table 2) showed that the year of participation in service-learning showed differences among groups within both ISU and MAK; residence location showed differences within the ISU alumni; and the current education and location where alumni grew up showed differences in SAD within MAK alumni.

The location of alumni homes when growing up, specifically, rural vs. urban areas was equally important in understanding the intercultural context since the program is in rural Kamuli district in agriculturally related projects for both ISU and MAK students. MAK alumni from rural communities had higher intercultural competence development measured by SAD than their counterparts from urban areas. Similarly, at the time of the study, alumni from MAK with bachelor's degrees (completed or in progress) indicated a statistically higher increase in intercultural competence than those with doctoral degrees. The above findings may be related to the year of participation where recent alumni both ISU and MAK in the 2016–2019 cohort had statistically higher development of their intercultural competence as measured by SAD than those of cohorts of 2011–2015 for ISU and 2006–2010 for MAK.

Table 2

*Demographic Characteristics and Self-perceived Appreciation of Differences of the Service-Learning Alumni from Iowa State University and Makerere University.*

Variable Description	Iowa State University (ISU)				Makerere University (MAK)			
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p-value</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p-value</i>
<i>Year at university</i>								
Freshman	15	5.29	.354	.264	-	-	-	.496
Sophomore	36	4.99	.716		83	4.91	.839	
Junior	30	4.98	.577		47	4.81	.713	
Senior	12	5.22	.502		-	-	-	
<i>Gender</i>								
Male	30	4.96	5.89	.495	72	4.87	.804	.545
Female	62	5.12	.615		57	4.89	.788	
Preferred not to disclose	01	5.00	-		01	4.00	-	
<i>Kamuli residence and nationality of residents</i>								
Kamuli townhouse UG, US	59	5.02 <sup>a,b</sup>	.618	.099	47	4.67	.892	.261
Mpirigiti Center UG, US	22	5.27 <sup>b</sup>	.514		25	5.02	.847	
Naluwoli village houses UG	-	-	-		21	4.87	.803	
Namasagali rural house UG	-	-	-		31	5.08	.515	
Namasagali College Houses UG, US	02	4.28 <sup>b</sup>	.277		02	4.98	.340	
Namasagali Univ. houses UG, US	10	5.05 <sup>a,b</sup>	.633		04	4.62	.909	
<i>Current education status</i>								
Bachelors	40	5.13	.566	.618	69	5.01 <sup>a</sup>	.747	.013
Masters	41	5.00	.589		40	4.87 <sup>a,b</sup>	.821	
Doctorate	12	5.04	.792		21	4.43 <sup>b</sup>	.766	
<i>Home setting environment</i>								
Urban	30	5.15	.647	.584	47	4.62 <sup>a</sup>	.901	.021
Semi-urban	33	4.99	.592		34	4.97 <sup>a,b</sup>	.824	
Rural	30	5.07	.584		49	5.04 <sup>b</sup>	.593	
<i>Year in service-learning</i>								
2006-2010	28	5.19 <sup>a</sup>	.595	.008	21	4.58 <sup>a</sup>	.948	.053
2011-2015	28	4.77 <sup>b</sup>	.551		61	4.82 <sup>a,b</sup>	.743	
2016-2019	37	5.19 <sup>a</sup>	.588		48	5.06 <sup>b</sup>	.752	

*Note.* Superscripts <sup>a</sup> and <sup>b</sup> depict mean differences within groups after *Turkey's post hoc* analysis. Scale for Appreciation of Differences: 1=Strongly disagree through 6=Strongly agree.

Similar inferences can be drawn for the residence housing during service-learning. While alumni lived in five locations, the cohorts of 2018–2019 lived in a single complex for all ISU and MAK constructed by the CSRL, partly resolving the issues of separate housing. A separate analysis (Table 3) revealed that the 2018–2019 cohort had higher changes in their intercultural competence on the construct of SAD than in 2006–2017 in all other residences.

**Table 3**

*Differences in Self-perceived Appreciation of Differences of the Service-Learning Alumni by Residence in Mpirigiti (2018–2019) and All other Residences (2006–2017).*

Alumni group	Residence and cohort year	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p-value</i>	<i>d</i>
ISU and MAK	Mpirigiti Center UG, US (2018–2019)	50	5.14	0.706	0.038	0.335 <sup>s</sup>
	All other residences (2006–2017)	173	4.90	0.725		
	Total	223	4.95	0.726		
ISU only	Mpirigiti Center UG, US (2018–2019)	24	5.26	0.533	0.063	0.468 <sup>s</sup>
	All other residences (2006–2017)	69	4.99	0.617		
	Total	93	5.06	0.605		
MAK only	Mpirigiti Center UG, US (2018–2019)	26	5.03	0.830	0.265	
	All other residences (2006–2017)	104	4.83	0.785		
	Total	130	4.87	0.794		

Relatedly, the demographic characteristics of race and ethnicity influenced SAD; among the ISU alumni, 77 (84.3%) identified themselves as White. Of the remaining ISU alumni who reported race and ethnicity, 15 (15.7%) were categorized as alumni of color, who included Black/African American (5.9%), Hispanic (3.9%), Asian (2.9%), Multiethnic (2.0%), and American Indian/Native Alaska (1.0%). An independent sample *t*-test indicated that ISU white alumni had higher changes in their intercultural development measured by SAD ( $M = 5.09$ ,  $SD = .607$ ) than ISU alumni of color ( $M = 4.92$ ,  $SD = .613$ );  $t(90) = .972$ ,  $p = .886$ . However, the differences were not statistically significant. The MAK alumni (130 of 150 respondents) reported being from 13 regions of Uganda, with 11.4% from the Busoga region where the service-learning program operates. The remainder of the alumni were from the regions of Buganda (39.6%), Kigezi (11.4%), Ankole (8.7%), Teso (6.7%), Toro/Rwenzori (5.4%), Bugishu (4.0%), Bunyoro (4.0%), West Nile (2.7%), Lango (2.0%), Sebei (1.3%), Acholi (1.3%), and Bukedi (1.3%). When the 13 regions of MAK alumni are merged into two major ethnic groups of Uganda (i.e., the Bantu and Nilotes [Nilotics and Hamites]) (Butt, 2017; Ingham, 2023; Okia, 2023; Taylor, 2017), alumni of the Bantu origin had higher changes in their intercultural issues as measured by their SAD ( $M = 4.89$ ,  $SD = .790$ ) than Nilotes ( $M = 4.80$ ,  $SD = .837$ );  $t(128) = .459$ ,  $p = .438$ , but not statistically significant. The Bantu ethnic group comprised the most MAK alumni (84.6%) with ancestry origins of Buganda, Busoga, Kigezi, Ankole, Toro/Rwenzori, Bugishu, Bunyoro, and Bukedi. The Nilotes ethnic group comprised MAK alumni (15.4%) with ancestry origins of Acholi, West Nile, and Lango (Nilotics), and Teso and Sebei (Nilo Hamates).

### Self-perceived Awareness of Structural Inequalities (ASI) of ISU and MAK Alumni

The third objective sought to determine if there are any differences between ISU and MAK alumni regarding changes in their knowledge, skills, abilities, awareness, and attitudes about intercultural issues, measured by their self-perceived awareness of structural inequality (ASI). An independent sample *t*-test was performed. The combined complete responses were (ISU,  $n = 102$ , MAK,  $n = 129$ ) and results indicated that ISU alumni had higher changes in their ASI ( $M = 4.93$ ,  $SD = .762$ ) than MAK alumni ( $M = 4.84$ ,  $SD = .639$ )  $t(229) = .945$ ,  $p = .188$ . However, these differences were not statistically significant overall. Overall, the mean values for ISU alumni were high for most of the ASI Likert items, and eight of the 19 items (Table 4) were within the overall scale of 5.0 (agree) to 6.0 (strongly agree). The scale of 5.0 in this study represents an “agree” with the statement on the ASI construct of intercultural competence development because of alumni participating in the service-learning program. Four ASI items revealed statistically significant differences between ISU and MAK alumni. Of these four, one item showed that ISU alumni had higher mean differences than MAK alumni. For instance, service-learning helped me to develop more complex ways of analyzing problems faced by students in under-resourced communities. Relatedly, three items showed MAK alumni had higher mean differences than ISU. For instance, service-learning helped me to develop a belief that working in groups doing community service can solve social problems.

Table 4

*Differences in Intercultural Competence Measured by Self-perceived Awareness of Structural Inequality between the Service-Learning Alumni from Iowa State University (ISU) and Makerere University (MAK)*

Service-learning helped me to develop	ISU			MAK			Statistic		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>p</i>	<i>t</i>	<i>d</i>
An understanding that social inequality in opportunities in the educational sector can limit development.	103	5.50	.862	145	5.38	.913	.365	1.092	
Awareness that systems can disadvantage groups of people.	103	5.33	.994	146	4.86	1.048	.891	3.538	
Awareness of the needs of people from diverse backgrounds.	103	5.18	.927		5.02	.952	.291	1.291	
Awareness of the needs of people whom I do not share with the same ethnicity.	103	5.17	.864	146	4.92	1.054	.771	1.961	
More complex ways of analyzing problems faced by students in under-resourced communities.	103	5.17	.879	147	4.69	1.215	<.001	3.483	.45 <sup>S</sup>
Awareness of the needs of people whom I do not share with the same culture.	103	5.12	.921	146	5.04	.946	.317	.629	
A commitment to lifelong involvement in the community addressing social problems.	103	5.10	1.034	145	5.01	1.057	.697	.668	
The ability to examine social problems to address root causes and urgent needs.	103	5.09	1.077	147	5.07	.922	.102	.099	
Interest in addressing international social problems.	103	4.99	1.159	144	4.43	1.233	.291	3.607	
A belief that it is your responsibility as someone who lives in the community to be involved to solve social problems.	103	4.98	1.038	147	5.33	.953	.543	-2.775	
Interest in addressing national social problems.	102	4.97	1.076	146	4.90	1.059	.975	.483	
More complex ways of analyzing problems faced by students with difficulty in school.	103	4.97	1.061	145	4.72	1.122	.126	1.793	
Interest in addressing global social problems.	103	4.93	1.148	146	4.36	1.233	.456	3.555	
A belief that working in groups doing community service can solve social problems.	103	4.81	1.164	144	5.31	.863	.029	-3.875	.49 <sup>S</sup>
A belief that doing advocacy as a group can solve social problems.	103	4.80	1.042	146	4.91	1.132	.867	-.814	
A belief that working in a group taking political action can solve social problems.	103	4.59	1.098	147	4.23	1.325	.144	2.272	
A belief that individuals doing community service can solve social problems.	103	4.45	1.289	144	5.03	.923	<.001	-4.130	.49 <sup>S</sup>
Commitment to helping people in communities through charity.	103	4.43	1.209	146	5.19	.992	.005	-5.466	.66 <sup>M</sup>
A belief that doing advocacy as an individual can solve social problems.	103	4.23	1.139	146	3.96	1.237	.516	1.779	

Note. Cohen's *d* depicts effect size: <sup>S</sup>=Small, <sup>M</sup>=Medium. ASI: 1=Strongly Disagree to 6=Strongly Agree.

## Discussion

The discussions focused on how alumni who participated in the service-learning program in Uganda developed their intercultural competence. We focused on two constructs of; self-reported perceived appreciation of difference—the idea that you have about the kind of person you are (your identity) to the people in contact with during the global service-learning experience, and self-reported perceived awareness of structural inequality—a system of privilege created by institutions within an economy (O’Grady, 2000).

### Self-perceived Appreciation of Difference (SAD) of Iowa State University (ISU) and Makerere University (MAK) Alumni

The ISU alumni had higher changes in their intercultural competence aspects, measured by their SAD than MAK alumni. The probable reasons for these results were related to the demographic composition (i.e., objective two) of ISU alumni, specifically related to their cultural constructs of residence housing, race, ethnicity, and gender of ISU alumni compared to MAK alumni. Studies revealed these constructs have greater influence on students’ participation, perception of their duties, and learning when they are immersed in communities that are different from theirs, such as can occur during global service-learning experiences (Donahue & Wise, 2021; Michl et al., 2025; Pusch & Merrill, 2023). Among ISU alumni, the majority (84.3%) identified as white, and 15.7% were categorized as alumni of color. Like other studies in global education programs when considering race and ethnicity, ethnic minorities formed a small proportion of the study abroad programs (Goldoni & Rusnak, 2024; Raby et al., 2014). White alumni had higher changes in their intercultural aspects as measured by SAD than alumni of color. Other studies have shown that students of color and white students have different ways in which they experience their service-learning (Kasravi, 2023; Lott & Brundage, 2025; Seider et al., 2013). It was argued that white students go through stages while advancing their racial and ethnic identity development than their counterparts of color who are found to identify easily with non-white communities from the beginning of their service-learning. Mitchell and Donahue (2023) indicate that ethnic minorities were very instrumental in helping their white peers to understand the communities during their learning, an aspect undergirding the importance of authentic interactions in intergroup contact theory.

The aspects of alumni’s SAD, for example, participation in service-learning helped me to interact with farmers/peoples of different: races; ethnicities; religions; and political realms showed significantly higher mean values for ISU than MAK alumni. The ISU alumni met the people in Uganda, who were different from theirs in the United States compared to MAK alumni whose race was similar (i.e., Africans) and their ethnicities comparatively similar. MAK alumni could not experience as much cultural difference in ethnic identity development as ISU alumni did. The different inherent customs alumni brought into the service-learning program together with a diversity of ethnicities and religions in the program area enriched students’ service-learning experiences across differences while pursuing a common service-learning goal. Among MAK alumni, by ethnicity, alumni of Bantu origin had higher changes in intercultural aspects as measured by their SAD than Nilotes (Nilotics and Hamites) (Butt, 2017; Ingham, 2023; Okia, 2023; Taylor, 2017). The Bantu ethnic group is the most dominant with the most population in Uganda and in this study. During service-learning travels and activities, alumni experienced the different cultural heritages of various ethnic groups, including traditional dances when they visit cultural centers or at local school performances.

Similarly, Baganda MAK alumni cooked their traditional *Oluwombo*—matooke, and chicken wrapped in banana leaves (Langmia, 2020), during service-learning social events. To appreciate the local Busoga culture in the Kamuli district, all alumni were oriented on the customs including dress code, greeting gestures, and staple foods by a Kingdom cultural minister in their first week of arrival in Kamuli district (Ikendi, Retallick & Nonnecke, 2022; Ikendi, Retallick et al., 2023). These scenarios speak of the impact of the cultural distance between program participants and the local people on intercultural learning with

implications on academic learning (Hu & Cheung, 2021; Martin et al., 2017; Melkonian et al., 2019). With proper implementation of intergroup contact including the pursuit of common goals with guidance and support of program facilitators, the negative impacts of negative cultural distance, such as intergroup conflicts, can be minimized to facilitate cultural adaptability to intercultural competence development. Relatedly, gender as a form of identity has had a decision-making factor on students participating in study abroad programs. Among the ISU alumni in the service-learning program and participants of this study, the proportion of females was twice that of males; like the statistics of those studying abroad from the United States (Institute of International Education, 2024; Rhein & Phillips, 2024). Female students had a greater change in their perception of differences than males, a finding like that reported by Wilmarth (2004).

Our results are like those of the European Community Action Scheme for the Mobility of University Students Plus (Lomer et al., 2024; Böttcher et al., 2016) where more females participated than males. Some studies have found specific reasons why more females study abroad. In the Netherlands, van Mol (2022) found that among study abroad programs between 2006 and 2015, female students were more likely to study abroad due to the influence of their educated mothers to attain intergenerational social mobility than if their mothers had less education and whose influence for study abroad was for professional development purposes. In Germany, Cordua and Netz (2022) found that female students develop the desire to study abroad while in high school and go on to focus their attention on programs that will foster the development of their competencies, for instance, linguistic skills that will support their future career and global citizenry goals. The living arrangements were another factor that fostered intercultural competency, specifically when the students lived binationally (all alumni in the same space) in the cohorts of 2018 and 2019 than it did when students lived in separate residences in the cohorts of 2006–2017. In 2018, the Mpirigiti Rural Training Center was commissioned, and part of this Center provides housing for up to 48 trainees and 13 faculty which fosters intercultural learning (Ikendi & Retallick, 2025). There were other reasons for the binational living arrangement than intercultural competency, such as efficiency, project development, teamwork, activities, and companionship, which all contributed to the success of several aspects of the service-learning program and the host organization.

Furthermore, students from both ISU and MAK indicated anecdotally that they *wanted to live together* (Nonnecke et al., 2015) and that was a primary impetus of the breadth of the Mpirigiti Rural Training Center. The design of the faculty coincides with the preferences of Generation Z who wish to study abroad, staying binationally with access to Wi-Fi, living space, ample reading and social activity areas for sports among other accessories that facilitate academic success (InciK, 2022; McGee et al., 2022; Warner, 2024). Living binationally has had positive impact on United States students studying abroad through increasing quantity of intergroup contact, especially with black students (Frekot, 2021) and language learning (Paradowski et al., 2024). With good program leadership and design, especially through critical reflections, such contact can result in authentic intergroup dialogues that foster intercultural learning across diverse cultures and reduces cultural distance between and among intergroup members. The SAD construct of intercultural competence is an important aspect of higher education, especially in the United States, where there has been evidence of biases in the workplace, schools, and communities (Jackson, 2011). The fact that ISU alumni demonstrated a greater change in their appreciation of differences while working with alumni similar and different from them, can form a pool of advocates to promote that all belong in higher education. One goal of multicultural service-learning described earlier by Cipolle (2010, p. ix) was to “eradicate inequalities and injustices” through promoting students’ interactions and developing connections and comradeship among themselves, their faculty, and communities. A service-learning program can create a lifelong bond among students that forms alumni ambassadors who are in constant contact with each other and the program through social media, sharing their life achievements which creates a sense of belonging (Ikendi, Retallick & Nonnecke, 2022; Sharma, 2022).

### **Self-perceived Awareness of Structural Inequality (ASI) of ISU and MAK Alumni**

Alumni from ISU had higher changes in their ASI than MAK alumni. In developing intercultural competence through ASI, alumni developed the skills, knowledge, and awareness of how to challenge social injustices through critical analysis and civic actions. Multicultural service-learning is one pedagogical approach where alumni can learn and promote social justice through advocacy, commitment to solving community social problems, and philanthropy. Alumni developed an understanding that social inequality in opportunities in the educational sector limits community development. Alumni worked in Kamuli district to achieve the goals of the CSRL of ending hunger partly through establishing school gardens and related projects (Byaruhanga et al., 2017; Ikendi, Retallick et al., 2023; Nonnecke et al., 2015). School gardens increase food supplies to school lunch programs, reducing undernutrition and chronic nutrition in schools, promote learning, and transfer knowledge to community. A major component of the school gardens program involved students establishing binational team projects where at least two ISU and MAK alumni established projects in crops, postharvest handling and storage, soil improvement, small-scale drip irrigation, poultry projects, beekeeping, agroforestry, school feeding, and sanitation and hygiene to help solve community problems (Ikendi, Retallick & Nonnecke et al., 2023; Nonnecke et al., 2015). These projects contributed to alumni's intercultural competence development through ASI by gaining greater interaction with peers, outreach staff, instructors, and farmers which increased their intercultural competence, lifelong commandership, and academic development.

Similarly, alumni developed more complex ways of analyzing problems faced by communities and students in under-resourced communities. After their service-learning experiences, some alumni ventured into research to contribute to solutions to the identified community challenges. For example, they invented a pedal-operated grain cleaner in 2018 with the support of the faculty from ISU and MAK. The grain cleaner has been adopted by the CSRL program in schools and communities (Mayanja et al., 2018). Machine innovation has reduced time spent on manual cleaning of grains for school lunch programs and provides clean grains for storage thereby increasing grain shelf-life in schools and communities. Several other research projects have been conducted by service-learning alumni. These research projects are one of the ways of contributing to community development using scientific findings (Acker et al., 2015) and based on indigenous knowledge (Masinde & McMillan., 2015) for adoption of innovations. These projects include research in soils, agronomy, and agroforestry (Akitwine, 2021; Kwikiiriza, 2022; Tusiime et al., 2019; 2020; Wokibula et al., 2024) to improve crop production. Development of postharvest technologies (Mayanja et al., 2018; Tumutegyeize et al., 2022). Public health (Buyinza et al., 2024) and food safety practices (Nabwiire et al., 2023; Ssabika et al., 2024). Livestock development programs to improve consumption of animal-source proteins (Walugembe et al., 2014). The blend of scientific rigor and indigenous knowledge are the cornerstone of CSRL extension programming moving communities towards food and nutrition security (Ikendi, Mwenyi & Retallick, 2025).

Similarly, due to community immersion and understanding of community challenges, especially resource limitations, student alumni foster community development through charity and development of philanthropy. For instance, ISU alumni after participating in the program, organized fundraising efforts with their peers on campus, starting in 2007. Annually from 2007–2015, benefit dinners and concerts, celebrity auctions, and general donations garnered funds for infant and children's nutrition (Masinde, McMillan et al., 2015). Furthermore, since 2015, an ISU alumna gained sponsors for a marathon and raised over US \$10,000 for a school feeding program; while another alumna requested and was supported by ISU to launch the Uganda Alliance at ISU (Ikendi & Retallick, 2025). The club supports mothers of Tusubila Crafts Group by selling their bead and raffia crafts, baskets, and jewelry products at ISU (Ikendi, Mwenyi & Retallick, 2025; Martin, 2018), expanding the economic opportunities of rural mothers. Other projects alumni have contributed to include a book drive where more than 30,000 books for elementary school pupils were donated to schools to improve English literacy. Additionally, MAK alumni through a social media group have shown support to charity through the CSRL fundraising and crowdfunding efforts to contribute to

ending hunger in rural communities. These revelations support the findings that students who participate in study abroad programs have a likelihood of participating in charitable work which contributes to the revitalization of vulnerable communities (Campbell et al., 2023; Holmes et al., 2022). These charitable works have been termed as “experiential philanthropy” or “student philanthropy” or “learn by giving” (Campbell et al., 2023; Olberding, 2009; ) which was defined as a “teaching and learning approach that integrates charitable giving with academic study, in order to enrich learning, teach civic responsibility, and strengthen communities” (Olberding, 2009, p. 465). Support through alumni philanthropy as an ASI aspect is supported by students participating in global service-learning and developing an awareness of the needs of diverse people as well as developing complex ways of problem analysis to contribute to solutions.

### **Conclusions**

The goal of this study was to determine whether participation in a global service-learning program in Uganda impacted the alumni’s intercultural competence development. The study was grounded in the intergroup contact hypothesis, which explains how individuals hold biases against one another and how intergroup contact helps negate those perceptions through building relationships, encouraging equal status, and positive interactions sanctioned by the support of authorities (Allport, 1954). Intercultural competence development was based on two variables: appreciation of difference and awareness of structural inequality. In both variables, alumni of ISU were found to have had a greater agreement that their knowledge, skills, abilities, awareness, and attitudes about intercultural aspects changed than MAK alumni. Diversity constructs such as race, ethnicity, gender, and housing arrangements accounted for these differences in intercultural development among ISU alumni. In global service-learning, white students are found to undergo stages of improvement while advancing their racial and ethnic identity development compared to students of color who easily find themselves matching within the communities of color. Similarly, by gender, female ISU alumni were twice more than males, and the females were found to have had greater changes in their intercultural competence development. The composition of participating students has shown a great influence on how they experience their service-learning and subsequent development of intercultural competence. For example, in programs where there are more White and female students participating, there is a likelihood that most participants will develop intercultural competence, compared to their counterparts, based on indicators of appreciation of differences and awareness of structural inequalities. The program planners in global education programs should recruit students in relatively equal proportions by ethnicity and gender to foster intergroup contact for developing intercultural competencies.

This study also recommends the adoption of the service-learning approach in study abroad programs. The immersion of learners into communities helps to overcome natural fears and breaks the fear of the unknown due to intergroup contact among participants, building relationships sanctioned by the support of program authorities. Service-learning brings in the concept of critical reflections in the learning space where students reflect on their activities and share their worldview concerning their community immersion which improves their reasoning, critical thinking, and appreciation of differences for positive identity development. The essence behind intercultural competence is where one acts respectfully when in contact with a different person. In this respect, three factors play important roles including knowledge, behavior, and attitude about the culture of the person in contact with, coupled with self-respect. How students are motivated and willing to learn about the culture of peers and community members in contact determines their level of perception of them. The behavior illustrates itself in constructive criticism and self-responsibility during interaction i.e., the quantity of interaction defined by the number of people interacted with and the quality of interaction in terms of the authenticity and the usefulness of the interaction other than mock and trivial exchanges for a positive impact. The development of intercultural competence based on indicators of awareness of structural inequalities that exist in communities and the subsequent involvement of service-learners in brainstorming solutions is an important benefit of the service-learning program to such communities. Having a group of alumni from a high-income country, patterning with alumni from a low-income country and working in under-resourced communities like Kamuli district

requires thorough pre-departure orientations from experienced facilitators to reduce the perceptions of bias (Ikendi, 2025; Ikendi, Retallick et al., 2023). These orientations also help to break the tendency of having white saviorism complex in service-learning programs. Reciprocal learning between learners and the communities where they get immersed during service-learning occurs, and as learners get immersed in communities, they understand how structural inequalities limit development and find ways of contributing to the overall goal of the beneficiary served as well as their educational goals. Service-learning helps to prepare future professionals to work in a diversity of community settings.

### **Implications and Recommendations**

This study acknowledges that intercultural competence development is affected by a lack of familiarity and confidence with the new culture and customs by students where students get immersed during their service-learning experiences. This aspect means students need knowledge and the capability to transfer oneself from known culture to a new unknown world. Participants in global service-learning programs are bound to reflect on their culture which gives them the ability to understand their peers' and communities' cultural uniqueness (Ikendi, Mwenyi, Somers et al., 2025). This transfer in learning is a process rather than a one-time event to gain cumulative knowledge and get immersed in totally a new cultural norm which in turn enables members in intergroup contact to communicate effectively (Morris, 2019; Morris & Iseminger, 2020). Global service-learning programs in this respect require faculty who are familiar with issues in international education, study abroad, and familiar with the culture of communities with which students conduct their service-learning. These faculty help to prepare students during the pre-departure stage which helps minimize students' cultural shock as they get immersed into a new community to provide a service as they learn reciprocally. Faculty also can assist students if they experience reverse culture shock when a binational, global service-learning program ends. This long-term learning process of cultural transformation requires additional research on how cultural distance is measured. This study recommends additional investigation using the intercultural ladder developed through the Intercultural Development Inventory (Hammer, 2023). This approach to assessing intercultural competence will help program administrators and facilitators understand how students develop the competencies stage by stage along the competence continuum.

Studies on culture shock and reverse culture shock within these global service-learning alumni are also recommended. Although most reverse culture shock (see, Young, 2014, p. 59) references students studying abroad, in our study population, not only were ISU students likely to experience the reverse culture, but MAK alumni also were likely affected because of the diverse ethnic origins. The effect of a prolonged stay outside of a dominant culture creates a situation of cultural paralysis upon returning home. Studies have shown that most students do not fully anticipate cultural paralysis since they focus on cultural shock upon entry into their service-learning experience (Fanari et al., 2021; Jafarov & Aliyev, 2024; Kiely, 2023). This proposed study will provide insights into comparative cultural shock by understanding if the MAK alumni have culture shock by being with ISU alumni and reverse culture shock, upon returning to one's own culture and location/place. Also, an understanding of what programs are offered to students about their post-program reflections or understanding upon return to ISU and MAK respective institutions helps students with the processing and adaptation. Additionally, research should also focus on MAK alumni who travel to another country for an internship, graduate school, and/or work. Because of the intercultural competency developed during the binational service-learning program, the outcome could help to understand whether they were better prepared and could utilize any intercultural understanding or skills from the Kamuli district service-learning program in those later experiences. The global service-learning program is a major multicultural program that promotes intercultural competence development. Global service-learning programs should promote cross-cultural binational living arrangements for students. It is very expensive for a program to provide food, housing, and transportation for binational arrangements and thus, when considering intercultural competency, it is worthwhile.

### Limitations of the Study

The first limitation of the study was the nature of the study participants. The program service-learning alumni dates back from 2006 to 2019. These are believed to have gone through a tremendous transformation in intercultural competence, which may have influenced their perception of these study variables long after they participated in service-learning. Gathering information on their perception of how the service-learning program influenced their intercultural competence development depended on their ability to remember how things happened during that period of their time while working with communities. Similarly, there were naturally programmatic changes, over time, in developing the service-learning program, for instance, housing facilities, service-learning activities, number of schools, and communities worked with (Ikendi, Retallick et al., 2023; Nonnecke et al., 2015). Not all groups participated in the same activities because of such developments that have happened as the program grew and expanded to serve more students, schools, and communities. The second limitation was the Intergroup Contact Theory adopted to study the intercultural competence constructs of appreciation of differences and awareness of structural inequalities. This study focused on understanding the perceptions of the two groups of service-learning alumni, i.e., ISU and MAK, who were in contact. The biggest limitation literature presented on the variable was the narrow focus. Over the past decades, the literature reviewed showed that most definitions of diversity in higher education focused on race and ethnicity. Most importantly, where there are African, African American, and White students, most studies have dichotomized their variables to only Black and White, thus other students of color and other forms of diversity were being neglected (Parker III, 2018). It was more concerning in this study because ISU alumni already had black and white alumni, and MAK alumni who were only black, had a multiplicity of ethnicities among them.

The third limitation was disparities among participants, for instance, among ISU alumni, by race and ethnicity. Ethnic minorities formed a small proportion of the total in study abroad programs, just like in other studies (Goldoni & Rusnak, 2024; Raby et al., 2014). Additionally, female alumni of ISU were found to be twice as likely to participate as males, a finding like earlier studies (Schmidt, 2009; Böttcher et al., 2016), with implications for the self-reported perception of appreciation of differences. The fourth limitation was methodological, especially using self-report formats where alumni were asked to indicate their level of perception about diversity constructs. The flip side of such methods has been the possibility of bias. Different individuals are likely to succumb to a desire to provide socially acceptable replies, especially on sensitive questions like gender, where options go beyond male or female to include transgender and its forms. In a similar sex orientation, studies have found that the learning climate of LGBTQ students was not favorable overseas in host countries like Uganda, where the law does not favor their sexual orientation (Donahue & Wise, 2021). Overall, disparities, preconceived biases, and bias amongst students affect participation in international programs, especially for less privileged students. The few students who are granted the chance to participate can influence the nature of the data, especially for self-reported studies like this study.

### References

- Abel, V. Z. (2011). *Self-authorship in undergraduate students in a blended-learning multicultural course* (Master's Thesis, Iowa State University). Digital Repository, Theses and Dissertations
- Acker, D. G., Musoke, H. K., & Sseguya, H. (2015). Capitalizing on impacts & CSRL's multiplier effects. In L. M. Butler & D. E. McMillan, (Eds.), *Tapping philanthropy for development: Lessons learned from a public-private partnership in rural Uganda* (pp. 223–254). Kumarian.
- Allen, A. (2021). One school's attempt to build community through service-learning. In T. L. Heafner, K. L. Handler, and C. T. Rock, (Eds.). *The divide within: Intersections of realities, facts, theories, and practices* (pp. 151–170). Information Age Publishing.

- Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.
- Akitwine, F. (2021). *Pedology of typical soils of Kamuli District and pedotransfer functions to predict cation exchange capacity in limited-resource settings* [Master's thesis, Iowa State University]. Digital Repository, Theses and Dissertations.
- American Association for Agricultural Education (AAAE). (2023). *AAAE research values*. <https://aaea.wildapricot.org/National-Research-Values>
- Ary, D., Jacobs, L. C., Irvine, C. K. S., & Walker, D. A. (2018). *Introduction To Research In Education*. Cengage Learning.
- Ash, S. L., & Clayton, P. H. (2009). Generating, deepening, and documenting learning: The power of critical reflection in applied learning. *Journal of Applied Higher Education*, 1, 25–48. <https://files.eric.ed.gov/fulltext/EJ1188550.pdf>
- Böttcher, L., Araújo, N. A., Nagler, J., Mendes, J. F., Helbing, D., & Herrmann, H. J. (2016). Gender gap in the ERASMUS mobility program. *PLoS One*, 11(2). <https://doi.org/10.1371/journal.pone.0149514>
- Boyle-Baise, M., & Langford, J. (2004). There are children here: Service-learning for social justice. *Equity and Excellence in Education*, 37(1), 55–66. <https://doi.org/10.1080/10665680490422115>
- Bringle, R. G., & Clayton, P. H. (2020). Integrating service learning and digital technologies: examining the challenge and the promise. *Revista Iberoamericana de Educación a Distancia*, 23(1), 43–65. <https://doi.org/10.5944/ried.23.1.25386>
- Bročić, M., & Miles, A. (2021). College and the “culture war”: Assessing higher education’s influence on moral attitudes. *American Sociological Review*, 86(5), 856–895. <https://doi.org/10.1177/00031224211041094>
- Butt, A. (2017). *The Nilotes of the Sudan and Uganda: East Central Africa Part IV*. Routledge.
- Buyinza, T., Ssenkooba, F., Mayega, R. W., Mutyoba, N. J., Birungi, W. S., Mutole, G., & Ndejjo, R. (2024). Perceived risk for hypertension and associated factors among adult persons living with HIV in Kamuli district, Uganda. *medRxiv*, 2024-07. <https://doi.org/10.1101/2024.07.02.24309844>
- Byaruhanga, L. A., Masinde, D., Nonnecke, G. R., Lutwama, D., Kimiywe, J., & Nyangaresi, D. M. (2017). Effect of school garden food production on nutrient adequacy of school meals for children attending Namasagali primary school in rural Kamuli district, Uganda. *Journal of Food Science and Nutrition*, 2(4), 114–118. <https://www.researchgate.net/publication/330852982>
- Bushina, E. V., & Karimova, A. M. (2024). The role of interpersonal and intergroup attitudes in interaction strategies of Russian and Tajik students in Tajikistan. *Journal of Psychology and Pedagogics*, 21(2), 511–531. <https://doi.org/10.22363/2313-1683-2024-21-2-511-531>
- Butin, W. D. (2005). *Service-learning in higher education: Critical issues and directions*. Palgrave.
- Butin, W. D. (2006). The limits of service-learning in higher education. *The Review of Higher Education*, 29(4), 473–498. <https://doi.org/10.1353/rhe.2006.0025>

- Campbell, D. A., Appe, S., & Rozansky, M. J. (2023). The experiential philanthropy canon: What students read in experiential philanthropy courses and why it matters. *Journal of Public Affairs Education, 29*(2), 134–155. <https://doi.org/10.1080/15236803.2022.2107416>
- Cipolle, S.B. (2010). *Service-learning and social justice: Engaging students in social change*. Rowman & Littlefield Publishers.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Academic Press.
- Collopy, R., Tjaden-Glass, S., & McIntosh, N. A. (2020). Attending to conditions that facilitate intercultural competence: A reciprocal service-learning approach. *Michigan Journal of Community Service Learning, 26*(1), 19–38. <https://doi.org/10.3998/mjcsloa.3239521.0026.102>
- Conner, J., & Erickson, J. (2017). When does service-learning work? Contact theory and service-learning courses in higher education. *Michigan Journal of Community Service Learning, 23*(2), 53–65. <https://doi.org/10.3998/mjcsloa.3239521.0023.204>
- Constantin, A. A., & Cuadrado, I. (2021). Perceived intergroup competition and adolescents' behavioral intentions toward minorities: The role of threat, stereotypes and emotions. *Current Psychology, 40*(7), 3488–3498. <https://doi.org/10.1007/s12144-019-00297-8>
- Cordua, F., & Netz, N. (2022). Why do women more often intend to study abroad than men? *Higher Education, 83*(5), 1079–1101. <https://doi.org/10.1007/s10734-021-00731-6>
- Cruz-Feliciano, H. M. (2023). An alternative to service-learning: Reframing community-based experiences in a process-oriented approach. In A. Rizzotti & H. Cruz-Feliciano (Eds.), *Voices from the South: Decolonial perspectives in education* (pp. 80–96). Forum on Education.
- Dallinger, C. E. (2015). *An integrated theory of prejudice reduction through service-learning: college students' interactions with immigrant children* (Doctoral Dissertation, Iowa State University). Graduate Theses and Dissertations. <https://lib.dr.iastate.edu/etd/14332/>
- Diao, W., & Wang, Y. (2021). Multiracial Chinese American women studying abroad in China: The intersectionality of gender, race, and language learning. *Intercultural Communication Education, 4*(1), 39–55. <https://doi.org/10.29140/ice.v4n1.444>
- Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys: The tailored design method*. John Wiley & Sons.
- Donahue, D., & Wise, A. (2021). Queer students, international service-learning, and inclusivity: Insights into identity, activism, and learning. *Journal of Homosexuality, 68*(9), 1417–1443. <https://doi.org/10.1080/00918369.2019.1698913>
- Dunlap, M., Scoggin, J., Green, P., & Davi, A. (2007). White students' experiences of privilege and socioeconomic disparities: Toward a theoretical model. *Michigan Journal of Community Service Learning, 13*(2), 19–30. <http://hdl.handle.net/2027/spo.3239521.0013.202>
- Fanari, A., Liu, R. W., & Foerster, T. (2021). Homesick or sick-of-home? Examining the effects of self-disclosure on students' reverse culture shock after studying abroad: A mixed-method study. *Journal of Intercultural Communication Research, 50*(3), 273–303. <https://doi.org/10.1080/17475759.2020.1866643>

- Foley, E., & Hannaford, D. (2024). Sex, love, and study abroad: The impact of intimate relationships in study abroad outcomes. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 36(3), 178–203. <https://doi.org/10.36366/frontiers.v36i3.917>
- Frekot, E. (2021). Intergroup contact and housing selection of united states study abroad students. (Master's Thesis, University of Cape Town). Thesis and Dissertations. <http://hdl.handle.net/11427/35695>
- Gajda, A., Bójko, A., & Stoecker, E. (2022) The vicious circle of stereotypes: Teachers' awareness of and responses to students' gender-stereotypical behaviour. *PLoS One*, 17(6), e0269007. <https://doi.org/10.1371/journal.pone.0269007>
- Goldoni, F., & Rusnak, S. (2024). Minority, low-income students: Study abroad and global studies experiences. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 36(3), 83–114. <https://doi.org/10.36366/frontiers.v36i3.824>
- Grain, K., Katumba, T., Kirumira, D., Nakasiita, R., Nakayenga, S., Nankya, E., ... & Ssegawa, M. (2019). Co-constructing knowledge in Uganda: Host community conceptions of relationships in international service-learning. *Journal of Experiential Education*, 42(1), 22–36. <https://doi.org/10.1177/1053825918820677>
- Guo, C., Li, M., & Hou, L. (2025). The mediating role of intergroup anxiety in the relationship between meta-stereotype and achievement motive among adolescents in rural–urban integration areas: a cross-sectional study. *Frontiers in Psychology*, 16, 1599706. <https://doi.org/10.33/fpsyg.1599706>
- Halley, J., Eshleman, A., & Vijaya, R. M. (2022). *Seeing white: An introduction to white privilege and race*. Rowman & Littlefield.
- Hammer, M. R. (2023). The intercultural development inventory: A new frontier in assessment development of intercultural competence. In M. V. Berg, R. M. Paige, and H. K. Lou, (Eds.). *Student learning abroad: What our students are learning, what they're not, and what we can do about it* (pp. 115–136). Taylor & Francis.
- Holmes, A. F., Webb, K. J., & Albritton, B. R. (2022). Connecting students to community: Engaging students through course embedded service-learning activities. *The International Journal of Management Education*, 20(1), 100610. <https://doi.org/10.1016/j.ijme.2022.100610>
- Hu, J., & Cheung, C. K. (2021). Gender difference in the effect of cultural distance on academic performance among cross-border students in China. *Psicologia: Reflexão e Crítica*, 34(1), 33. <https://doi.org/10.1186/s41155-021-00199-4>
- Ikendi, S. (2025). “I had no idea of what we were going to do:” Reflecting on preflexive learning, the architectural foundation of learning in global service-learning programs. *International Journal of Literacy and Education*, 5(2), 219–232. <https://doi.org/10.22271/27891607.2025.v5.i2c.333>
- Ikendi, S., Mwenyi, R.M., & Retallick, M. S. (2025). Love for humanity and universal goodwill: reflections on philanthropy through theory of change and the United States Land grant values in Uganda. *International Journal of Agriculture Extension and Social Development*, 8(9), Part E, 322–336. <https://doi.org/10.33545/26180723.2025.v8.i9e.2422>

- Ikendi, S., Mwenyi, R. M., Somers, R., Sikdar, S., & Kakungulu, B. A. (2025). National anthems and flags: Strategic tools for global citizenry and cross-cultural competence development in global educational programs. *International Journal of Literacy and Education*, 5(2), Part D, 307–321. <https://doi.org/10.22271/27891607.2025.v5.i2d.346>
- Ikendi, S., & Retallick, M. S. (2025). Strategic leadership and management of multistakeholder organizations. *Journal of Agricultural Education*, 66(2), Article 9. <https://doi.org/10.5032/jae.v66i2.88>
- Ikendi, S., Retallick, M., & Nonnecke, G. (2022, May 16–19). *Measuring global service-learning alumni Facebook communication* (Poster Abstract). AAAE Conference. Oklahoma City, OK USA.
- Ikendi, S., Retallick, M. S., Nonnecke, G. R., & Kugonza, D. R. (2023). Influence of school garden learning approach on academic development of global service-learners. *Journal of Agricultural Education*, 64(4), 159–179. <https://doi.org/10.5032/jae.v64i4.167>
- InciK, E. Y. (2022). Generation Z students' views on technology in education: What they want what they get. *Malaysian Online Journal of Educational Technology*, 10(2), 109–124. <https://doi.org/10.52380/mojet.2022.10.2.275>
- Ingham, K. (2023). *The making of modern Uganda*. Routledge.
- Institute of International Education. (2024). *Destinations of U.S. study abroad students, 1999/2000 – 2022/2023*. Open Doors Report on International Educational Exchange.
- Jackson, V. (2011). Cultural competence in physical therapy education: Student perceptions on the effectiveness of cultural competence education methodology. *Journal of the National Society of Allied Health*, 8(9), 31–37.
- Jafarov, S., & Aliyev, Y. (2024). What causes culture shock? *South Florida Journal of Development*, 5(7), e4106. <https://doi.org/10.46932/sfjdv5n7-012>
- Kasravi, J. (2023). Students of color and study abroad: From barriers to results. In N. J. Gozik & h. b. Hamir, (Eds.). (2023). *Promoting inclusion in education abroad: A handbook of research and practice* (pp. 45–60). Taylor & Francis.
- Kiely, R. (2023). What international service learning research can learn from research on international learning. In R. G. Bringle, J. A. Hatcher, and S. G. Jones, S. G. (Eds.). *International service learning: Conceptual frameworks and research* (pp. 243–273). Routledge.
- Kwikiiriza, S. (2022). *Evaluation of horticultural practices for tropical squash production and marketing among smallholder youth farmers in Kamuli, Uganda* [Master's thesis, Iowa State University]. Digital Repository, Theses and Dissertations.
- Lamb, M., Dykhuis, E. M., Mendonça, S. E., & Jayawickreme, E. (2022). Commencing character: A case study of character development in college. *Journal of Moral Education*, 51(2), 238–260. <https://doi.org/10.1080/03057240.2021.1953451>
- Langmia, K. (2020). *Engeli yokulya oluwombo: Social media and the transformation of African and black diasporic forms of communication*. In K. T. Setiloane and A. K. Bangura, (Eds.), *Africa and globalization: Novel Multidisciplinary Perspectives* (pp. 53–71). Palgrave.

- Lomer, S., Budginaitė-Mačkinė, I., Carlson, S., Klasik, D., Bamberger, A., Nada, C., ..., Courtois, A. (2024). *Social inequalities in international student mobility: A systematic literature review*. Centre for Global Higher Education, University of Oxford.
- Lorenzo, M., Sáez-Gambín, D., Ferraces Otero, M. J., & Varela Portela, C. (2021). Reflection and quality assessment in service-learning projects: When, with whom, and why. *Frontiers in Education* 5, 605099. <https://doi.org/10.3389/educ.2020.605099>
- Lott, J., & Brundage, T. (2025). Race, racialization, and racism: Students of color and short-term study abroad learning. *Journal of Language, Identity & Education*, 24(2), 468–482. <https://doi.org/10.1080/15348458.2022.2149532>
- Lv, Z., Ying, C., & Chen, J. (2024). The impact of volunteer service on moral education performance and mental health of college students. *Plos One*, 19, 4. <https://doi.org/10.1371/journal.pone.0294586>
- Martin, A. J., Yu, K., Ginns, P., & Papworth, B. (2017). Young people's academic buoyancy and adaptability: A cross-cultural comparison of China with North America and the United Kingdom. *Educational Psychology*, 37(8), 930–946. <https://doi.org/10.1080/01443410.2016.1202904>
- Martin, T. (2018). Individual capacities (human capital) of the Tsubila crafts group [Master's Thesis, Iowa State University]. Iowa State University Digital Repository, Creative Components.
- Masinde, D., & McMillan, D. E. (2015). Starting where the people are. In L. M. Butler & D. E. McMillan (Eds.), *Tapping philanthropy for development: Lessons learned from a public-private partnership in rural Uganda* (pp. 111–144). Kumarian Press.
- Masinde, D., McMillan, E. D., Rothschild, M., & Nonnecke, G. (2015). Leaving the door open to emerging needs and opportunities. In L. M. Butler & D. E. McMillan (Eds.), *Tapping philanthropy for development: Lessons learned from a public-private partnership in rural Uganda* (pp. 145–164). Kumarian Press.
- Mayanja, I. K., Kigozi, J., Brumm, T., & Kawongolo, J. (2018). Design, fabrication, and testing of a pedal-operated maize grain cleaner. *Journal of Advances in Food Science & Technology*, 5(3), 105–111. <https://ikpress.org/index.php/JAFSAT/article/view/4321>
- Martín-Ondarza, P., Redondo-Corcobado, P., & Gálvez, B. (2022). The potential of service-learning in reducing prejudices of future educators: An educational intervention of direct intergroup contact. *Education Forum*, 20(1), 214–239. <https://doi.org/10.14516/fde.956>
- Martin, T. (2018). *Individual capacities (human capital) of the Tsubila crafts group* [Master's Thesis, Iowa State University]. Iowa State University Digital Repository, Creative Components
- Maxwell, K. E., Nagda, B. R., & Thompson, M. C. (Eds.) (2023). *Facilitating intergroup dialogues: Bridging differences, catalyzing change*. Taylor & Francis.
- Michl, T., Wilson, J., Stookey, A., Chiou, K., Raque, T. L., & Kracen, A. (2025). There's more out there: Examining the study abroad experiences of American transgender and gender expansive university students. *Higher Education*, 1-21. <https://doi.org/10.1007/s10734-024-01381-0>

- McGee, B., Jin, X., Park, N. K., Ball, S., & Carr, A. (2022). Designers' perceptions of biophilia and testing of the biophilic interior design matrix in China. *International Journal of Architectural Research*, 16(3), 517–535. <https://doi.org/10.1108/ARCH-10-2021-0279>
- McNeish, D. (2018). Thanks coefficient alpha, we'll take it from here. *Psychological Methods*, 23(3), 412–433. <https://doi.org/10.1037/met0000144>
- Melkonian, M., Areepattamannil, S., Menano, L., & Fildago, P. (2019). Examining acculturation orientations and perceived cultural distance among immigrant adolescents in Portugal: Links to performance in reading, mathematics, and science. *Social Psychology of Education*, 22, 969–989. <https://doi.org/10.1007/s11218-019-09506-5>
- Mitchell, T. D., & Donahue, D. M. (2023). I do more service in this class than I ever do at my site: Paying attention to the reflections of students of color in service-learning. In J. R. Strait, & M. Lima, (Eds.). *The future of service-learning: New solutions for sustaining and improving practice* (pp. 172–190). Routledge.
- Morris, P. (2019). *Communicating across cultures*. Pearson Publishing.
- Morris, P., & Iseminger, S. (2020). *Discovering self and others*. Kendall Hunt Publishing.
- Nabwiire, L., Shaw, A., Nonnecke, G., Talbert, J., Muyanja, C., Boylston, T., Tarté, R., & Prusa, K. (2023). Compliance with food safety standards by beef vendors at butcheries in Kamuli district, Uganda. *African Journal of Food Science*, 17(9), 192–206. <https://academicjournals.org/journal/AJFS/article-full-text-pdf/322527071169>
- Nagda, B. R. A., & Gurin, P. (2023). How intergroup dialogue works: Critical-dialogic foundations and extensions. In C. Baik and R. E. Kahu, (Eds.). *Research handbook on the student experience in higher education* (pp. 223–236). Edward Elgar Publishing.
- Nicoletti, C., Sevilla, A., & Tonei, V. (2022). Gender stereotypes in the family. *Institute of Labor Economics*, 15773. <http://doi.org/10.2139/ssrn.4294398>
- Nishimura, M., & Yokote, H. (2020). Service-learning as a means to understand socio-economic privilege, inequality, and social mobility. In C. S. Sanger, & N. W. Gleason (Eds.). *Diversity and inclusion in global higher education: Lessons from across Asia* (pp. 183–207). Springer.
- Nonnecke, G. R., & Acker, D. G. (2019). Global resource systems: A curriculum to train the next generation of global leaders. *NACTA Journal*, 63(1a), 85–92. <https://www.jstor.org/stable/27128500>
- Nonnecke, G., McMillan, D. E., Kugonza, D., & Masinde, D. (2015). Leaving the doors open to new beneficiaries. In L. M. Butler & D. E. McMillan (Eds.), *Tapping philanthropy for development: Lessons learned from a public-private partnership in rural Uganda* (pp. 165–189). Kumarian.
- O'Grady, C. R. (2000). *Integrating service-learning and multicultural education in colleges and universities*. Lawrence Erlbaum Associates.
- Okia, O. (2023). The migration of Nilotes and their Settlement. In S. W. Nasong'o, M. N. Amutabi, and T. Falola, (Eds.). *The palgrave handbook of Kenyan history*. (pp. 23–24). Palgrave.

- Olberding, J. C. (2009). "Indirect giving" to nonprofit organizations: An emerging model of student philanthropy. *Journal of Public Affairs Education*, 15(4), 463–492. <https://doi.org/10.1080/15236803.2009.12001572>
- Parker III, E. T. (2018, February 6). *Without a precise definition of diversity, progress difficult in higher education*. The University of Kansas News.
- Paradowski, M. B., Whitby, N., Czuba, M., & Bródka, P. (2024). Peer interaction dynamics and second language learning trajectories during study abroad: A longitudinal investigation using dynamic computational social network analysis. *Language Learning*, 74(S2), 58–115. <https://doi.org/10.1111/lang.12681>
- Pettigrew, T. & Tropp, L. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90(5), 751–783. <https://doi.org/10.1037/0022-3514.90.5.751>
- Pusch, M. D., & Merrill, M. (2023). Reflection, reciprocity, responsibility, and committed relativism: Intercultural development through international service-learning. In V. Savicki, V. (Eds.). *Developing intercultural competence and transformation: Theory, research, and application in international education* (pp. 297–321). Routledge.
- Raby, R. L., Rhodes, G. M., & Biscarra, A. (2014). Community college study abroad: Implications for student success. *Community College Journal of Research and Practice*, 38(2–3), 174–183. <https://doi.org/10.1080/10668926.2014.851961>
- Rhein, D., & Phillips, B. (2024). American international students' motivation to study abroad in Thailand. *Globalisation, Societies and Education*, 22(5), 790–805. <https://doi.org/10.1080/14767724.2022.2160970>
- Santos, D. J. D. S., Palomares, N. B., Normando, D., & Quintão, C. C. A. (2010). Race versus ethnicity: Differing for better application. *Dental Press Journal of Orthodontics*, 15(3), 121–124. <https://doi.org/10.1590/S2176-94512010000300015>
- Schmidt, P. (2009). Men and women differ in how they decide to study abroad, a study finds. *Higher Education*, 56(11). <https://www.chronicle.com/article/MenWomen-Differ-in-How/49085>
- Scott, E. (2012). *A critical analysis of multicultural service-learning* (Doctoral dissertation, Michigan State University). <https://eric.ed.gov/?id=ED551749>
- Seider, S., Huguley, J. P., & Novick, S. (2013). College students, diversity, and community service-learning. *Teachers College Record*, 115. <http://www.tcrecord.org/Content.asp?ContentId=16880>
- Sharma, D. (2022). Teaching professional use of social media through a service-learning business communication project. *Business and Professional Communication Quarterly*, 85(4), 395–419. <https://doi.org/10.1177/23294906221074687>
- Sperling, R. (2007). Service-learning as a method of teaching multiculturalism to white college students. *Journal of Latinos and Education* 6(4), 309–322. <https://doi.org/10.1080/15348430701473454>
- Ssabika, G., Buyinza, T., Brumm, T., Byakika, S., & Mukisa, I. M. (2024). Microbiological safety and nutritional adequacy of composite porridge flour used in a selected school-feeding program in Kamuli District, Uganda. *European Journal of Agriculture and Food Sciences*, 6(2), 60–66. <https://doi.org/10.24018/ejfood.2024.6.2.794>

- Tapia, M. N. (2021). Social engagement in the higher education curriculum. CLAYSS: Buenos Aires.
- Tapia, M. N. (2024). From the “ivory tower of academia” to engaged 21<sup>st</sup> century universities: A global historic approach to the social mission of higher education. In M. N. Tapia, D. Giorgetti, A. Furco, K. M. Weigert, A. Vinciguerra, A. González, ... & B. Bouwman, (Eds). *Towards a global history of service-learning* (pp. 15–116). CLAYSS: Buenos Aires.
- Tapia, M. R. (2025). Solidarity service-learning: The university’s mission in action. In M. E. Rauktis and R. Sharma, R. (Eds), *Creating successful community and academic partnerships in service-learning*. Palgrave.
- Taylor, B. K. (2017). *The Western Lacustrine Bantu (Nyoro, Toro, Nyankore, Kiga, Haya and Zinza with Sections on the Amba and Konjo): East Central Africa Part XIII*. Routledge.
- Thoron, A. C., Myers, B. E., & Barrick, K., R. (2016). Research priority 5: Efficient and effective agricultural education programs. In G. T. Roberts, A. Harder, and T. M. Brashears, M. T. (Eds). *American Association for Agricultural Education national research agenda: 2016–2020* (pp. 41–48). Gainesville, FL: Department of Agricultural Education and Communication.
- Tusiime, S. M., Nonnecke, G. R., & Jensen, H. H. (2020). Tomato seed value chain analysis and seed conditioning among seed companies in Uganda. *International Food and Agribusiness Management Review*, 23(4), 501–514. <https://doi.org/10.22434/IFAMR2019.0199>
- Tusiime, S. M., Nonnecke, G. R., Masinde, D. M., & Jensen, H. H. (2019). Evaluation of horticultural practices for sustainable tomato production in eastern Uganda. *HortScience*, 54(11), 1934–1940. <https://doi.org/10.21273/HORTSCI14277-19>
- van Mol, C. (2022). Exploring explanations for the gender gap in study abroad: A case study of the Netherlands. *Higher Education*, 83(2), 441–459. <https://doi.org/10.1007/s10734-020-00671-7>
- Walugembe, M., Nadiope, G., Stock, J. D., Stalder, K. J., Pezo, D., & Rothschild, M. F. (2014). Prediction of live body weight using various body measurements in Ugandan village pigs. *Livestock Research for Rural Development*, 26(5), Article 96. <https://www.lrrd.cipav.org.co/lrrd26/5/walu26096.htm>
- Warner, M. P. S. (2024). *A fresh breath: Study abroad sustainable housing expectations in higher education* (Thesis, Georgia Southern University). Honors College Theses.
- Wilmarth, L. R. (2004). *Service-learning and diversity: The relationship of race, gender, and prior service experience to students' self-perceived appreciation of difference and awareness of structural inequality* [Master’s Thesis, University of Maryland]. Theses and Dissertations.
- Wokibula, R. A., Akitwine, F., Mtama, J. G., & Burras, L. C. (2024, November 10–13) *Cation exchange capacity within and between pedons of the Kamuli catena, Busoga sub-region, Uganda* (Online presentation). American Society of Agronomy Conference. San Antonio, TX.
- Young, G. E. (2014). Reentry: Supporting students in the final stage of study abroad. *New Directions for Student Services*, 146, 59–67. <https://doi.org/10.1002/ss.2009>