# Assessing the impact of a virtual short-term study-abroad program on Japanese university students' global-mindedness

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## Abstract

Short-Term Study-Abroad (STSA) programs are popular in Japanese higher education; however, participating students' experiences are under-researched, particularly in areas outside of second-language acquisition. This study empirically assessed the impact of a six-week study-abroad program with a US university (conducted online as a virtual program due to the COVID-19 pandemic) on sophomore Japanese university students' Global-Mindedness (GM). This mixed-methods study employed experimental ($n$=53) and control ($n$=82) groups to investigate the following research question: What is the impact of a virtual STSA program on the GM of participating students? Quantitative data were collected at three time periods (pretest/posttest/post-posttest) using a modified version of the 30-item, five-factor GM Scale (GMS, see Hett, 1993). Descriptive statistics and two-way ANOVA analyses revealed a significant increase in the experimental groups' posttest results, which then returned to similar pretest levels in the post-posttest period. Reflection papers, surveys, and semi-structured interviews informed the qualitative perspective, and findings suggested a need for sustained post-program supportive measures to help maintain students' GM.

Keywords: global competence; global-mindedness; global-mindedness scale; study-abroad; virtual exchange; virtual mobility.

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# 1.    Introduction

There is currently a drive in worldwide tertiary contexts to graduate more interculturally competent citizens. In Japan, the Ministry of Education, Culture, Sports, Sciences and Technology (MEXT) is actively pushing for graduates with increased linguistic, communicative, and global abilities to improve Japan's economic competitiveness and to help build stronger cross-cultural ties in the global arena (MEXT, 2014). However, opportunities to engage in intergroup contact, which are an essential component for developing global competence, are quite limited in Japan. STSA programs (defined as one to eight weeks in length by Gaia, 2015) are becoming increasingly popular for Japanese students (JASSO, 2019), and are considered to be an effective means to promote global education (Henthorne, Miller, & Hudson, 2001) and to counterbalance the lack of domestic intergroup contact found in Japan. However, a lot of study-abroad research in Japan has centered on second-language (L2) development with far fewer studies addressing global competence (Coleman, 2015). Some researchers (e.g. Schnickel, Martin, & Maruyama, 2010) have posited that intercultural sensitivity and other global skills are even more important developmental focuses for participants than L2 learning during study-abroad. Existing studies on global competence (e.g. global-minded attitudes, beliefs, and behaviors) are often limited to case studies and subjective accounts (e.g. Amuzie & Winke, 2009; Sato & Hodge, 2015; Tanabe, 2019); however, mixed-methods studies, which are strongly encouraged when assessing intercultural understanding (Deardorff, 2006), in areas such as social contact and adaptation between international students and hosting students (see Pho & Schartner, 2021), are less common.

The recent COVID-19 crisis has also resulted in changing student attitudes toward study-abroad that necessitate further investigation in higher education (Mok, Xiong, Ke, & Cheung, 2021). As a result, there is burgeoning interest in understanding how global citizenship and other intercultural factors can be developed virtually (Lenkaitis & Loranc-Paszylk, 2021). With these factors in mind, the purpose of this mixed-methods study was to empirically assess the impact of a short-term US-based academic program (conducted online as a virtual study-abroad program) on the GM of a group of sophomore Japanese university students.

# 2.    Literature review

## 2.1.    Situating the concept of GM within study-abroad literature

GM, which is the focus of this study, is defined in this paper as, "a worldview in which one sees oneself as connected to the world community and feels a sense of responsibility for its members.

This commitment is reflected in attitudes, beliefs, and behaviors" (Hett, 1993, p. 143). To assess GM, Hett (1993) designed the GMS. This tool aims to capture an individual's GM perspective through five dimensions that reveal the extent to which one has a more global (ethnorelative) or monocultural (ethnocentric) mindset. To the authors' knowledge, the GMS has yet to be used for research in virtual study-abroad contexts.

To acquire GM, students need to build not only theoretical knowledge but also the social skills, attitudinal mindsets, and beliefs through education that cultivate broader global perspectives (Kaowiwattanakul, 2020). Increasing GM includes building a greater capacity to shift perspectives and behavior by experiencing cultures and individuals with greater levels of complexity (Hammer, 2019). STSA can provide critical opportunities for intergroup contact and other experiences that allow for exposure to alternative worldviews, and a window for educators and researchers to then better understand participating students' GM. Koyanagi (2018) found that prior to participation in STSA programs in Malaysia and Canada "students reflected a prevalent attitude in Japan that the rest of the world is somewhere outside of themselves and someone else's concern" (p. 114); however, studying abroad helped them to better identify with global society by cultivating more active attitudes toward it through interpersonal relationships. In contrast, other researchers (e.g. Burgess, 2014; Kuroda, Sugimura, Kitamura, & Asada, 2018) have noted that Japanese youths tend to be perceived as 'inward-looking' and 'insular', suggesting an attitude of indifference toward the world outside and a reduced interest in venturing overseas. Global education, however, can help prepare students to act responsibly as citizens in global society (Merryfield & Kasai, 2004) by facilitating intercultural attitudes, beliefs, and behaviors for increased GM.

There is currently a dearth of studies examining Japanese participants' STSA intercultural learning experiences (Koyanagi, 2018). Studies utilizing the GMS to measure GM have been primarily conducted in western study-abroad contexts (e.g. Golay, 2006; Hett, 1993) with far fewer studies found in Asian contexts (e.g. in Thailand by Kaowiwattanakul, 2020; Lawthong, 2003; and in Malaysia by Yaacob, Awang-Hashim, Valdez, & Yusof, 2019). Results from previous GMS studies have offered promising results for study-abroad practitioners. The 396 US undergraduate students who participated in Hett's (1993) original GMS research demonstrated lower ethnocentric behavior, higher cultural awareness, and a greater sense of interconnectedness with culturally different others. In an STSA program in the Dominican Republic involving immersive community-based global learning that emphasized extensive pre-departure collaboration with the host community and critical reflection, 48 American university students increased their GMS scores in a pre/post measurement design (Matheus & Gaugler, 2020). Longer terms abroad (defined as one semester or more) were found to increase GMS scores compared to STSA results in a large-scale study involving 520 university participants in the US (Kehl & Morris, 2008). Kehl (2005) also found

that students in a semester-long study-abroad program scored higher on the GMS compared to students who had merely expressed intentionality to participate in future programs. Given the limited GMS studies to date, more research is needed in study-abroad contexts in general and with STSA programs involving Japanese university students in particular.

## 2.2.    Virtual Exchange (VE), virtual mobility, and international outlook

Several terms have been used to categorize the various interactional dynamics that occur through online learning with a key distinction between: (1) VE, and (2) virtual mobility (O'Dowd, 2018). VE is defined as the various general approaches to online intercultural learning that include:

> "the engagement of groups of learners in extended periods of online intercultural interaction and collaboration with partners from other cultural contexts or geographical locations as an integrated part of their educational programs and under the guidance of educators and/or expert facilitators" (O'Dowd, 2018, p. 5).

Virtual mobility, however, can be defined more specifically as the usage of online platforms and tools by students to take courses at geographically distant universities (O'Dowd, 2018).

While virtual mobility programs have gained popularity recently, understanding the effects of such programs on the international outlook of student participants is currently an under-researched area, especially where STSA programs are concerned. Previous research from VE settings indicates a need to further study participants' international outlook. In one mixed-methods study between eTandem dyads of Japanese and American students, Akiyama (2017) concluded that unintended tensions through intercultural communication breakdowns were attributable to silence and other culture-specific interactional patterns of communication that formed a kind of vicious cycle (e.g. of turn negotiation that ultimately resulted in a loss of interlocutor rapport), which then necessitated greater pedagogical intervention by facilitators. With particular relevance to the focus on GM, Commander, Schloer, and Cushing's (2022) pre/post quantitative study found a strong link between intercultural effectiveness skills, including increased worldviews, and various forms of VE (framed as high-impact practices) with higher education participants across several disciplines. Commander et al. (2022) also concluded that mixed-methods research practices are needed to offset the potential for bias in self-reported data alone, and that experimental/control designs may lead to more robust results. In a review of intercultural communication competence and telecollaboration research, Avgousti (2018) suggested that more studies are required to understand participants' development through virtual mediums. Investigations involving the role of VE in developing participants' global competence are especially needed outside of western contexts (Ganassin, Satar, & Regan, 2021).

The purpose of this study is to empirically assess the effects of a six-week virtual study-abroad program on Japanese university students' GM (through an experimental/control group design), while monitoring its pre/post effects (Time 1: four weeks before the program commenced, and Time 2: a week after the program concluded), and then following up half a year later (Time 3, see Figure 1).

**Figure 1.   Sequential study design to measure GM**

| Time 1: Pretest | → | Program Experience | → | Time 2: Posttest | → | Time 3: Post-posttest |

The research question was:

> What is the impact of a virtual STSA program on the GM of participating students?

## 3.   Methodology

### 3.1.   Context for the research

An annual STSA academic program was developed in collaboration between the Faculty of Global Liberal Studies (GLS) at a private university in central Japan and the School of Sustainability and Global Launch at a US university that started in 2018. Program goals aimed to stretch the intellectual, intercultural, linguistic, and personal growth of participants. This program utilized a global education curriculum to increase learner engagement by offering more authentic experiences and practical learning opportunities that extend beyond traditional classroom learning to build global competence (Lindsay & Davis, 2013). An active learning pedagogical approach was built into the program to help facilitate students' GM development. This optional six-week STSA program is offered annually in June/July for GLS sophomores. Due to the global COVID-19 pandemic, the customized 2021 program was conducted as a virtual study-abroad program instead and can best be classified as virtual mobility (O'Dowd, 2018). It utilized online platforms and tools and involved teacher-to-student intergroup contact through online lectures and projects. The STSA online program in this study also encompassed dimensions of VE in that there was frequent international engagement and collaboration in the form of student-to-student intergroup contact.

First, the program consisted of two primary courses: Research Methods in Sustainability; and Applied Projects in Sustainability. In these courses, the Japanese students interacted with each other and with their instructors from the US university (in English), while conducting research, crafting research papers, and delivering academic presentations. Virtual classes were held on Zoom every morning (two 75-minute classes), from Tuesday to Saturday (Japan Standard Time). In addition, students also attended a series of lectures, focusing on sustainability (e.g. sustainable urban planning and architecture, food systems sustainability, sustainable economic systems, and sustainable energy). Most of these lectures were held live, but several were delivered via streamed recordings.

Second, twice a week in the afternoon (for the length of the six-week program), students also had the option of participating in one-hour virtual group exchanges with 20 student volunteers from the US-based university, which were not assessed. These sessions provided students with opportunities to interact in English with American university students on topics related to their studies and topics of their choosing. The sessions were intentionally not monitored by the researchers so that students would have to develop their own agency and take the initiative when interacting with the US student volunteers. These student volunteers were selected by the US institution for their outgoing personalities and for their interest in Japanese culture. The following instructional guidelines were given to the US students prior to their online interactions with the Japanese students: (1) engage the Japanese students in topics (e.g. water pollution, climate change, sustainable energy, and so on) and tasks (e.g. discussions, debates, research topic development, and so on) as assigned by instructors; (2) use English during interactions; (3) aim to draw the students out and allow them to be the main contributors (e.g. sharing their ideas, opinions, questions, and so on) while not dominating interactions; (4) contribute your own ideas and examples from your own educational and life experiences; (5) ask questions as a tool for engaging the students and to generate deeper thought and reflection into areas that need more development and support; and (6) aim to maintain an encouraging approach and friendly tone when communicating. Furthermore, the US students were oriented to raise any issues (e.g. communication, intercultural, interpersonal, or others) with instructors for mediation rather than doing so directly with the Japanese students. Prior to the commencement of the program, several online sessions were also held between the Japanese and the American students. These pre-program exchanges were designed primarily as ice-breaker opportunities to allow the participating Japanese and US students to build rapport prior to engaging in more academic interactions during the actual program.

The pedagogical approach underpinning the design of the program was to create an interactive sustainability program for L2 university students, who are non-science majors, that best replicated the physical study-abroad program students would have normally participated in. Developing

critical thinking skills alongside core competencies in environmental literacy, science literacy, and information literacy were the central objectives for the program. The reading content was developed exclusively by the US host institution for the purpose of this program and several other parallel STSA programs. Each module featured authentic reading materials taken from various US contexts, with additional English language support activities, comprehension questions, and practical tasks for the students to take action related toward the particular SDG covered in the module. As with the face-to-face STSA program, scaffolding was built into the virtual program in the form of pre-class vocabulary exercises, in-class supportive materials to guide notetaking and discussions, and post-class review assignments and Q&A sessions with instructors. While the program instructors were all US-based and faculty members of the host institution, several came from varying international backgrounds. Post-program feedback from the US university hosting the program indicated they were very satisfied with the English level as well as the performance and effort of the participating students.

### 3.2. Participants

The experimental group (*n*=53) was comprised of sophomore GLS students who participated in the virtual STSA program. The control group (*n*=82) was comprised of sophomore students who attended regular classes at their Japanese university, which differed from the courses taken by the experimental group. By including a control group from the same year and faculty as the experimental group, the researchers aimed to determine if potential increases in GM could be attributed to the virtual study-abroad program treatment effect. A socio-demographic questionnaire conducted before the program revealed that the vast majority of participants were female (74%), aged 19 or 20, had prior overseas experience (70%), and nearly half of the participants reported having at least one foreign friend. Their average English ability according to TOEFL results was equivalent to CEFR B1~B2. Participants did not receive compensation. Ethical approval for the study was obtained (No. 20-044) from the researchers' host institution, adhering to strict regulations governing the collection and management of data from human subjects, as well as protecting the participants' privacy. All of the second-year GLS students at the host institution were eligible to participate in the research or to refrain from participating.

### 3.3. GMS

The quantitative data collection instrument used in this study is a modified version of the GMS (Hett, 1993), which is a multi-dimensional construct comprised of five subscales (see Table 1). The 30-item GMS measures GM on a five-point Likert scale (strongly disagree, disagree, unsure, agree, strongly agree) where total scores range from 30 (low) to 150 (high).

**Table 1.  GMS (Hett, 1993, p. 143) subscales and definitions**

| Subscale (# of items) | Definition |
|---|---|
| Responsibility (7) | A deep personal concern or moral responsibility for people around the world with a desire to improve inequitable conditions. |
| Cultural Pluralism (8) | An appreciation for cultural diversity with a belief that each individual contributes some of the value to the world. |
| Efficacy (5) | A belief that an individual's actions can make a difference. |
| Globalcentrism (5) | A mode of thinking that involves considering the greater good of the world community rather than the benefit of one's own country. |
| Interconnectedness (5) | An appreciation for and awareness of the way in which all people from all nations are connected. |

According to Hett (1993), the GMS demonstrated internal reliability of .90 using Cronbach's coefficient alpha with a range of scores from .70 to .79 for the five subscales. The GMS was selected because it was originally designed for use by Hett (1993) with university students, the measurement construct of GM aligned well with the virtual program goals, and there were no prohibitive costs to use this instrument.

### 3.4.  Quantitative data collection and analysis

The original GMS items (Hett, 1993) were translated from English to Japanese by a bilingual native Japanese and then back-translated by another bilingual native Japanese to ensure the highest degree of accuracy possible. To make the survey more relevant for the Japanese participants, the wording in several items was modified. For instance, the labels 'American(s)' were changed to 'Japanese' (Items 8, 10, 16, 19, 30); 'United States/America' were changed to 'Japan' (Items 3, 5, 14, 17); the modal 'would' was added to reflect the more homogenous makeup of Japanese ethnic culture (Items 1, 3); 'here' was changed to 'in Japan' (Item 29); and 'in Bangladesh' was generalized to 'in another country' (Item 18). The survey was first piloted with a group of Japanese colleagues and non-study participants, whose feedback suggested refinements to the instrument. Therefore, the GMS version in this study (Appendix 1) should be considered a modified version of the original.

The GMS was distributed to the experimental and control groups at three time points through Qualtrics. The survey at Time 1 included: (1) socio-demographic questions, and (2) the GMS instrument. The surveys at Time 2 and Time 3 included the GMS instrument only. The collected survey data was then analyzed in Stata software (version 17) for descriptive statistics, and a two-way ANOVA was conducted to test the effects of group and time on GMS scores.

### 3.5.  Qualitative data collection and analysis

For the purposes of triangulation and to gain richer insight into the quantitative GMS data, the researchers collected qualitative data from the experimental group participants in the form of pre-program written reflection papers (*n*=53) (based on a one-off lecture course assignment introducing the concept of GMS), and pre/post-program online digital surveys. Additionally, post-program semi-structured interviews with a random selection of participants who volunteered from the experimental group (*n*=5), were held online in English at the conclusion of the program. A survey/interview guide with several questions pertaining to GM was implemented (Appendix 2).

Participant responses were coded using an open-coding approach in the MAXQDA software program (version 20.4.1). Deductive coding (Corbin & Strauss, 2008) was used to code participant responses in alignment with the general categories found in Hett's (1993) definition of GM: (1) beliefs (e.g. what constitutes a GM person, and why the participants enrolled in the program), (2) attitudes (e.g. views on the importance of GM development), and (3) behaviors (e.g. what specific GM-related actions the participants were taking after the program). An interpretive qualitative research design, which Merriam (2002) says can allow researchers to "discover and understand a phenomenon, a process, the perspectives and worldviews of the people involved, or a combination of these" (p. 6), was employed to analyze the data and to organize coded items into four relevant themes.

## 4.  Results and discussion

This section focuses on results derived from analyzing the quantitative and qualitative data, respectively. Several interpretations are offered to answer the research question framing this study: What is the impact of a virtual STSA program on the GM of participating students? Suggestions for future research avenues, and implications from this study to better support students' sustained GM development are then offered.

### 4.1.  Quantitative results and discussion

First, descriptive statistics were calculated to determine the means and standard deviations of the GMS for the experimental and control groups at each study stage (see Table 2).

As can be seen in the table below, GMS scores were nearly identical for both groups at Time 1 prior to the program treatment effect. However, the experimental group averaged a gain of +10.49 on the GMS compared to an average gain of +2.87 for the control group at Time 2 immediately after the

program treatment. At Time 3, six months later, the experimental group GMS scores fell by -7.73 points compared to a drop of -0.98 points for the control group. Between Time 1 and Time 3, the experimental and control groups demonstrated an increase in GMS scores of +2.76 and +1.89 points, respectively.

**Table 2. Descriptive statistics for experimental and control group GMS**

| Group | Time | Min | Max | Mean | SD |
|-------|------|-----|-----|------|-----|
| Experimental | T1 | 88 | 133 | 110.57 | 8.64 |
| | T2 | 95 | 138 | 121.06 | 11.28 |
| | T3 | 93 | 137 | 113.33 | 10.59 |
| Control | T1 | 81 | 134 | 110.72 | 11.18 |
| | T2 | 79 | 135 | 113.59 | 11.58 |
| | T3 | 80 | 130 | 112.61 | 9.85 |

Descriptive statistics for the GMS dimensions also revealed a stronger upward trend for the experimental group (see Table 3 and Table 4) between Time 1 and Time 2 as follows: Responsibility (+2.70), Cultural Pluralism (+2.90), Efficacy (+2.25), Globalcentrism (+0.31), and Interconnectedness (+2.31). Scores for each of these dimensions dropped between Time 2 and Time 3, however. For the control group, each of the dimensions remained relatively static across each time measurement.

**Table 3. Descriptive statistics for experimental group GMS dimensions (mean and *SD*)**

| Time | Resp. | CP | Efficacy | GC | Int. |
|------|-------|-----|----------|-----|------|
| T1 | 26.68 (2.78) | 32.25 (2.92) | 17.85 (2.72) | 16.19 (2.15) | 17.60 (2.67) |
| T2 | 29.38 (2.98) | 35.15 (3.89) | 20.12 (2.51) | 16.50 (2.78) | 19.91 (2.85) |
| T3 | 27.00 (3.49) | 33.18 (3.42) | 19.10 (3.16) | 15.23 (2.80) | 18.82 (2.69) |
| Items | 7 | 8 | 5 | 5 | 5 |

Note. Resp.=Responsibility, CP=Cultural Pluralism, GC=Globalcentrism, Int.=Interconnectedness

**Table 4. Descriptive statistics for control group GMS dimensions (mean and *SD*)**

| Time | Resp. | CP | Efficacy | GC | Int. |
|------|-------|-----|----------|-----|------|
| T1 | 26.41 (3.82) | 32.54 (2.87) | 18.09 (3.35) | 16.22 (2.53) | 17.46 (2.84) |
| T2 | 27.10 (3.46) | 33.43 (3.37) | 18.92 (3.14) | 16.00 (2.61) | 18.14 (3.16) |
| T3 | 26.22 (3.55) | 33.20 (3.13) | 19.22 (2.82) | 15.82 (3.02) | 18.16 (2.63) |
| Items | 7 | 8 | 5 | 5 | 5 |

Note. Resp.=Responsibility, CP=Cultural Pluralism, GC=Globalcentrism, Int.=Interconnectedness

Analyses of the descriptive statistics yielded two key findings relating to the research question in this study. Firstly, considering the relatively strong initial GMS scores in Time 1, it could be argued that participants already had a predisposition for GM. Previous research has shown that participants who join study-abroad programs (or who have expressed interest to join) may already have higher levels of GM (McGaha & Linder, 2014). This was true in the case of the experimental group and control group (some of whom had also expressed an interest in joining other study-abroad programs) in the present study. Furthermore, these participants mirrored Hett's (1993) own predictions for higher levels of GM, by virtue of (1) being GLS majors, (2) having had several formal education years of L2 learning, and (3) through being mostly female. Regardless of these predictive factors on initial GMS scores for both groups, the second key finding from the descriptive statistics is that the virtual study-abroad program treatment effect still demonstrated a further impact on experimental group participants' GM, as evidenced by the scores in Time 2. However, these gains dissipated over a six-month period leading to Time 3.

In order to uncover the effects of group (experimental, control) and time (Time 1, Time 2, Time 3) on the GMS, a two-way ANOVA was conducted. The GMS scores were normally distributed for the experimental group, as assessed by Shapiro-Wilk's test ($p$>.05). There was a lack of normal distribution for the control group; however, given the robustness of ANOVA to such assumption violations, analyses were still continued. There was homogeneity of variances for GMS scores for both groups, as assessed by Levene's test for equality of variances ($p$=.898). Results showed that there was a statistically significant interaction between the effects of group and time on GMS score, $F$ (2, 302)=3.50, $p$=.031. Simple main effects analyses showed a statistically significant group effect ($p$=.033) and a statistically significant time effect ($p$=.000). Post-hoc analysis with a Bonferroni adjustment revealed that the GMS was statistically significant for the experimental group, $F$ (2, 123)=11.60, $p$=.000 but not the control group, $F$ (2, 179)=1.16, $p$=.316. In addition, results for the experimental group were significant between Time 1 and Time 2 ($p$=.000), and between Time 2 and Time 3 ($p$=.004), but they were not significant between Time 1 and Time 3 ($p$=.578).

To test the internal consistency of the GMS, the value of the Cronbach's alpha reliability was found to be .87 at Time 2. Reliability results for each of the subscales varied as follows: Responsibility (.71), Cultural Pluralism (.72), Efficacy (.59), Globalcentrism (.46), and Interconnectedness (.68). Research by Vassar (2006) on the GMS also revealed low reliability on some subscales and reservations about the construct validity within the GMS. Reliability was an issue in another study using the GMS in Malaysia (Yaacob et al., 2019) where the researchers dropped some scale items (in 'interconnectedness' and 'cultural pluralism' dimensions) due to low inter-item to total dimension correlation; moreover, the 'efficacy' dimension was dropped since its alpha score was .28. Lower alpha scores may have partly stemmed from the smaller cohort sizes in the current

study. In contrast, larger sample sizes are known to lead to higher reliability scores, as seen in other studies using the GMS (e.g. Hett, 1993; Kehl & Morris, 2008). Additionally, the original GMS was designed for assessment of US university students by Hett (1993), which may explain some of the differences in reliability that were found in both the current study with these Japanese students and elsewhere (see Yaacob et al., 2019). To address this reliability issue, adding more cultural-specific items, as Lawthong (2003) did in designing a four-factor GMS model in the Thai socio-cultural context, merits consideration in future GMS research involving non-western participants (e.g. Japanese). Such adjustments could lead to higher internal consistency reliability and better model fit.

## 4.2. Qualitative results and discussion

For purposes of triangulation and to further explain the key quantitative analysis findings, salient examples from the qualitative data centering on participants' self-perceived GM beliefs, attitudes, and behaviors are offered here. These data are drawn from pre-program reflection assignments, online surveys (pre and post program), and online interviews (post program) with the experimental group. Four pertinent themes that emerged from the data are presented.

The first theme is that the experimental group were able to articulate their own conceptualization of a 'global-minded person'. This was determined when participants were asked to describe a global-minded person as part of a pre-study-abroad reflection exercise. A selection of responses is presented in Table 5 providing a representative overview of the participants' beliefs. An acronym comprised of 'P' (participant) and a number were randomly assigned to each participant. The comments have not been glossed.

**Table 5.   Conceptualization of a global-minded person**

| |
|---|
| "I guess a global-minded person has a skill to grasp a thing by various perspectives" – P1 |
| "A global-minded person is a person without prejudice. They can accept and think of any difference in the world" – P2 |
| "People who are able to observe how people behave in other countries, not their own. And that is someone who can deepen their understanding and interest in other cultures by closely observing the behavior of people from other countries" – P8 |
| "I would describe a global-minded person as the person who can clearly grasp some cultural situations in other countries where he/she doesn't belong to" – P10 |
| "Global-minded person is those who do not stick to their culture in other countries and understand and respect the differences" – P13 |
| "I feel that a global-minded person has an open attitude and they can accept other people easily" – P15 |

Prior to the commencement of the virtual study-abroad program, many participants were conceptually aware of what constitutes being globally minded. This finding aligns with the statistical data, where the participants exhibited relatively high GMS scores at Time 1. Qualitatively, however, their expressed beliefs on global-minded people featured scant personal connections, or evidence of agency, in being a part of the process of contributing to the greater good of the world themselves (an essential element of GM), mirroring a finding by Merryfield and Kasai (2004). Instead, participants' depictions were mostly generic and can best be described as holistic views of being open-minded toward other cultures and their respective differences. A lack of 'real world' experience and inadequate educational instruction toward GM development prior to the program could be underlying reasons for these somewhat simplistic beliefs.

A second theme emerged pertaining to participants' views of personal GM development and the importance they placed on developing it. Table 6 illustrates a representative sample of comments. The use of '-I' and '-S' in the participants' acronyms indicates data drawn from either interviews or surveys (Time 2), respectively.

**Table 6.   Views of personal GM development and its importance**

| |
|---|
| "GM is not being selfish or narcissistic. All people should be globally minded to solve problems peacefully without hurting people's environment" – P1-I |
| "GM is important to understand others better, especially history, culture, religion. I am not very global-minded. I need more knowledge from books" "Broad knowledge is the key to developing GM" – P2-I |
| "I think global-minded people can consider other people without prejudice and wrong assumptions" – P1-S |
| "…I realized that cross-cultural communication helps me to develop GM. I changed to see from a global perspective because I learned that countries in the world are interconnected and work together as systems through the [STSA] program" – P2-S |
| "I think GM means to look at things not only from a subjective point of view, but also from an objective and global perspective. I think from this program, I am able to have a GM more than before" – P4-S |
| "A global-minded person can think about the global impact sustainably as a global citizen. Maybe I became a more global-minded person than before joining this program" – P5-S |

This finding further reinforces the idea postulated above that the experimental group were already inclined to view GM favorably and were therefore predisposed to benefit from a GM-related virtual STSA program. This could explain their relatively high GMS scores in Time 1 and may partially explain the increase in GMS scores in Time 2. What is also clear here is that participants articulated their beliefs and attitudes not only generically but also in relation to themselves. This echoed findings in a study by Deacon and Miles (2022) on a group of Japanese students' pre-study-abroad self-perceived attitudes toward intercultural competence. It is assumed that actual experience in the program provided the impetus to then take more of a first-person reflective positioning.

A third theme drawn from the qualitative data analysis, and a potential key finding, is that overwhelmingly, a desire to improve their L2 skills had spurred participants' motivation to partake in the program. Table 7 illustrates this with a representative selection of their responses.

**Table 7.    Motivational intent for joining the STSA program**

| |
|---|
| "I joined the program to improve my English skills as the English on this program was different from [host institution's] English" – P1-I |
| "I decided to join this program as an opportunity to communicate with people outside Japan. My goal was to learn more practical English communication skills with people the same age" – P2-I |
| "My reason for joining was to experience English with native speakers and to broaden knowledge" – P3-I |
| "To deepen my understanding of sustainability and communicate with foreigners" – P2-S |
| "I expected to learn what American university is like. I also wanted to improve my English skills" – P3-S |
| "I was hoping to improve my listening and speaking skills. I was also hoping to learn more about sustainability and about the latest technology" – P4-S |

This small (and admittedly limited) sample of data could offer a potential explanation as to why the participants' GMS scores increased significantly in Time 2 but then dissipated by Time 3. While their GM had inevitably been enhanced by the program's focus on sustainability and global issues, and the intergroup contact exchanges that transpired virtually, the effect was short lived, which may be explained by participants' primary motivational focus on improving their English skills. This is not to underplay the importance that many participants also placed on developing GM, but to highlight the greater focus on linguistic development which likely overshadowed any potential long-term GM gains from the program experience. Additionally, post-program practical considerations may have also tilted their focus back on English language skills. Shortly after data were collected at Time 3, several participants commenced the demanding cycle of job-hunting in Japan. The rigidity and conservatism found in Japanese corporate culture are surmised by Burgess (2014) as factors leading to the devaluation of overseas experience by Japanese employers. Consequently, it is not hard to imagine future employers being more enamored with tangible and practical English language skills than a candidate who espouses having a 'global-minded mindset'.

Another possible explanation for why the experimental groups' average GMS scores declined at Time 3 was that they had reacclimated to their pre-program life and routine (e.g. taking classes and engaging in extracurricular activities at their Japanese university, doing their part-time jobs, and interacting with Japanese friends and family); therefore, they were no longer as focused on GM as they had been during the program. P2-I explained that "university is the summer of our life" to show how many Japanese students see time in university as a break between the rigors of high school study and the demands of working life. It is possible that focusing on sustaining and increasing their

GM, which had been a key element of the virtual study-abroad program, just did not fit with the view of university life in Japan, held by many students.

A fourth theme that emerged from the data is that participants espoused intentionality to engage in GM endeavors but did not exhibit concrete behaviors toward actualizing it. In fact, when asked what post-program actions to develop GM that they were taking, many participants had little to say. Table 8 provides some of their responses to help illustrate this point. This finding parallels conclusions in Commander et al.'s (2022) VE study of graduate and undergraduate students where high 'World Orientation' (self-perceived positive intercultural attitudes) scores were offset by lower scores in 'Relationship Development' (agency to pursue intergroup contact). Recent research by Deacon and Miles (2022) also noted a similar gap in a group of Japanese students' pre-study-abroad proactive intentionality and actual pursuit, through concrete steps, to attain greater intercultural competence.

**Table 8.    Post-program agency to develop GM**

| |
|---|
| "I found my dream for the future. I want to manage a café with sustainable materials" – P1-I |
| "I might get involved in an SDG campaign" – P2-1 |
| "I try to be a global-minded person, but maybe it is just conceptually. Not enough action, so not global-minded now. I kinda had a plan to be more global-minded in the future. Practical actions are necessary" – P3-I |
| "I do not have concrete plans, but I want to go abroad" – P1-S |
| "I don't have a specific plan" – P2-S |
| "I would like to exchange opinions with students not only from the US, but also from other countries so that I can have a more global perspective" – P4-S |
| "In my department, I will continue to learn about sustainability" – P5-S |

The decline in Time 3 GMS scores, and low agency seen here, could be attributed to the participants' university not affording them enough stimulating outlets to further develop or even simply maintain their GM. This could be partly attributable to campus restrictions due to the COVID-19 pandemic (e.g. limited international exchange events, and restrictions on the numbers of international students on campus with whom to interact). Another plausible explanation can be seen in a comment from P3-I, who suggested, "students need models" who take concrete GM-related actions. P3-I explained that without such role models, many students lacked the stimulus and awareness to take meaningful action for building more complex GM.

In sum, the qualitative data helped to explain some of the quantitative shifts found in the participants' GMS scores and offered potential insight into their worldviews through participating in this program. Perhaps the best representation of these views is encapsulated by P1-S:

"My case is online studying, but even it had a great effect on my GM. If students go abroad in real life, they will develop their GM more effectively because there are more opportunities to communicate with foreign people and experience different cultures".

This comment demonstrates the self-perceived positive impact that the virtual program had on this students' GM. It also illustrates the somewhat naïve perception that interacting with others from abroad will automatically lead to enhanced GM. Instead, such development requires intentionality, commitment, and proactivity to bear fruit.


## 5.    Implications

Although these findings suggest that virtual STSA programs can enhance students' GM, this boost is likely to be short lived unless students engage in ongoing development. Given the drop in GMS scores over the six-month post-program period, the most important implication for educators to take from this study is that post-program structured support is vital for sustained GM development.

First, post-program VE projects (e.g. eTandem or COIL exchanges) could provide valuable ongoing interactional opportunities for participants and their counterparts overseas, to maintain and further develop their GM and other abilities. Soria and Troisi (2014) commented that cross-cultural competence development is more evident when guided and structured activities are provided to participants by authorities, which can require different supportive measures by authorities in the digital world compared to traditional face-to-face learning contexts (e.g. Ganassin et al., 2021). For sustained and successful development through VE mediums to occur, educators must appreciate and embrace their role in the process (e.g. as facilitators, guides, and catalysts). Given the low post-program student agency to pursue GM development on their own that was found in this study, proper facilitation and guidance from educators are considered crucial for sustenance.

Second, more structured classroom-based opportunities for GM development should also be offered by educators. An example would be to increase students' exposure to international media coupled with follow-up discussions and other activities that target intentional GM growth. Offering more formal (e.g. mixed classes) and informal (e.g. mixer events) chances for on campus interaction (post pandemic) with international students could also lead to symbiotic GM growth. To answer the call for role models suggested earlier by student P3-I, senior students, or alumni members, who are actively involved in the community could serve as stimulating models for current students. Educators could invite alumni, and other inspiring figures, to offer talks demonstrating how their

actions are promoting GM development. Previous program participants, who have demonstrated higher degrees of GM, could serve as role models for participants in future program orientations. Additionally, students could be encouraged to proactively seek out role models on their own by researching Japanese activists (e.g. environmental and political) and learning from them as part of course requirements.

The findings suggest several potential avenues for future GM research. Firstly, it can be difficult to formulate conclusive remarks based on small and limited data samples, thus studies that use larger samples are needed. Less was known in this study pertaining to participants' earlier educational and life experience backgrounds that could have impacted their GM development before joining this program. Thus, another future research avenue is suggested by widening the scope of qualitative data inquiry, given that students' prior experiences both inside and outside of classrooms should be taken into account when considering their GM (see Kaowiwattanakul, 2020). Follow-up studies could be conducted to examine the long-term impact on students' GM near graduation or at points afterwards. Furthermore, understanding the complex connections between GM attitudes and other dimensions such as intentionality to engage in intergroup contact and actual behavioral patterns could be explored using a more comprehensive theoretical model design. Finally, comparative studies on virtual and face-to-face STSA programs would be another worthy avenue to explore after the pandemic has subsided. An opportunity for such research will likely present itself in the near future when the STSA program discussed in this study returns to face-to-face.

## 6.    Limitations

One limitation of this study is that the GMS was originally designed for usage with university students in the US. Thus, there may be a cultural bias with the GMS when used with other groups, especially non-western groups, and this could have impacted reliability scores. Additionally, the interviews, surveys, and reflection assignments were conducted in English (the participants' L2), which may have limited the complexity of students' responses. The qualitative results were also attenuated given that only pre- and post-program data were collected. Also, as study participants were not randomly selected to the experimental and control groups, this may have impacted the GMS scores of each group (although the baseline pretest results suggest that both groups were similar at this stage). Furthermore, the control group participants did not take the same two courses as the experimental group participants, likely impacting the findings. Finally, the possibility of social desirability bias is also acknowledged due to both researcher's position at this institution as instructors and study-abroad coordinators.

## 7.    Conclusion

This study investigated a virtual STSA program treatment effect on a group of Japanese university students' GM. Methodological rigor was increased by employing a control group, multiple-measurement stages, and mixed-methodology. Some researchers (see Munoz, Wood, & Cherrier, 2006 in Medora, Roy, & Brown, 2020) have argued that engaging in concrete (face-to-face) cross-cultural experiences, which they mention are lacking in traditional classroom environments, are necessary to promote GM. Participants in the current study could not engage in face-to-face intergroup contact; however, they still demonstrated statistically significant short-term gains in GM as measured by the GMS. These gains eroded over a six-month period, potentially due to a reduction in opportunities at the students' local university for in-person intergroup contact given that few international students were on campus due to the COVID-19 pandemic. Additionally, students may not have built up adequate competencies (e.g. agency, social skills) to pursue unstructured (i.e. unfacilitated) contact with their overseas partners, thus suggesting a need for more sanctioned support. In sum, understanding how virtual STSA programs can lead to attitudinal, belief, and behavioral shifts in GM is an area in need of further investigation in other contexts given the predominance recently of these programs.

## 8.    Acknowledgments

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**Appendix 1. Global-Mindedness Scale (GMS)**

Items are categorized according to their subscales. Changes to the original GMS are <u>underlined</u> with italicized revisions placed in brackets. Reverse-coded items are indicated with an asterisk.

### Responsibility

2. I feel an obligation to speak out when I see our government doing something I consider wrong.

7. When I hear that thousands of people are starving in an African country, I feel very frustrated.

12. When I see the conditions some people in the world live under, I feel a responsibility to do something about it.

18. The fact that a flood can kill 50,000 people <u>in Bangladesh</u> (in another country) is very depressing to me.

23. I feel very concerned about the lives of people who live in politically repressive regimes.

26. I sometimes try to imagine how a person who is always hungry must feel.

30. <u>Americans</u> (Japanese) have a moral obligation to share their wealth with the less fortunate peoples of the world.

### Cultural Pluralism

1. I (would) generally find it stimulating to spend an evening talking with people from another culture.

3. <u>The United States</u> (Japan) <u>is enriched by the fact that it is</u> (would be enriched by being) comprised of <u>many</u> (more) people from different cultures and countries.

8. <u>Americans</u> (Japanese) can learn something of value from all different cultures.

13. I enjoy trying to understand people's behavior in the context of their culture.

14. My opinions about national policies are based on how those policies might affect the rest of the world as well as <u>the United States</u> (Japan).

19. It is important that <u>American</u> (Japanese) universities and colleges provide programs designed to promote understanding among students of different ethnic and cultural backgrounds.

24. It is important that we educate people to understand the impact that current policies might have on future generations.

27. *I have very little in common with people in undeveloped nations.

### Efficacy

4. *Really, there is nothing I can do about the problems of the world.

9. *Generally, an individual's actions are too small to have a significant effect on the ecosystem.

15. It is very important to me to choose a career in which I can have a positive effect on the quality of life for future generations.

20. I think my behavior can impact people in other countries.

28. I am able to affect what happens on a global level by what I do in my own community.

### Globalcentrism

5. *The needs of <u>the United States</u> (Japan) must continue to be our highest priority in negotiating with other countries.

10. *<u>Americans</u> (Japanese) should be permitted to pursue the standard of living they can afford if it only has a slight negative impact on the environment.

16. *<u>American's</u> (Japanese) values are probably the best.

21. *The present distribution of the world's wealth and resources should be maintained because it promotes survival of the fittest.

29. *I sometimes feel irritated with people from other countries because they don't understand how we do things <u>here</u> (in Japan).

**Interconnectedness**

6. I often think about the kind of world we are creating for future generations.

11. I think of myself, not only as a citizen of my country, but also as a citizen of the world.

17. In the long run, <u>America</u> (Japan) will probably benefit from the fact that the world is becoming more interconnected.

22. I feel a strong kinship with the worldwide human family.

25. *It is not really important to me to consider myself as a member of the global community.

**Appendix 2. Global-Mindedness Survey and Interview Questions**

1. Why did you decide to join the virtual study-abroad program? (Who or what influenced your decision to join the program?)

2. What expectations did you have of your virtual study-abroad experience? Did your expectations come true?

3. What were some of your concerns or worries about your virtual study-abroad   experience?  Did your concerns or worries happen?

4. What do you think of when you hear the words "global-mindedness"? (Please describe a global-minded person. How would you describe a person who is NOT so globally minded?)

5. Do you think it is important to be global-minded, or not? Why (not)?

6. Do you think that typical Japanese university students are global-minded, or not? Why (not)?

7. Do you think that you are global-minded, or not? Why (not)?

8. What are some ways that Japanese university students can become more global-minded in Japan?

9. Do you think that virtual study abroad is a useful way to become more globally minded, or not? Why (not)?

10. Do you have a plan to develop more global-mindedness, or not? (Tell me more about that.)