

Globally Engaging American Agriculture and Natural Resource Students through Service Learning Study Abroad

Roger Kjelgren*, David Hole and Paul Johnson

Department of Plants, Soils and Climate, Utah State University, Logan, Utah, USA.

Multi-national scientific collaboration to address future biodiversity, food security, and climate change issues will require cultural intelligence and global navigation skills by future U.S. agricultural and natural resource (Ag-NR) scientists. However, undergraduate study abroad opportunities are largely absent for U.S. Ag-NR students, particularly in developing countries. In parallel, universities in non Anglophone countries, many in Asia, are seeking to building scientific capacity through graduate study abroad at institutions in the U.S. and publishing in the English-language international scientific literature. However, English speaking and listening skills of many such students are limited, a hinder to passing English proficiency exams required for study abroad and for improved scientific writing. We have developed the Service Learning-Undergraduate Study Abroad (SL-USA) to provide low cost study abroad opportunities for Ag-NR undergraduate students teaching English speaking and listening skills to graduate students and early career lecturers at partner institutions in Thailand and China. In exchange, the SL-USA students receive housing, field trips, and an immersive study abroad experience that builds cultural intelligence that is the basis for global navigation skills. To date, 14 SL-USA students from Utah State University have taught students at Kasetsart University in Thailand and Northwest Agriculture and Forestry University in China, improving English speaking and listening skills measured quantitatively and through self assessment of the Thai and Chinese students. The SL-USA students have benefitted from the study abroad experience, particularly in learning the parallels between cultural intelligence and the scientific method.

Key words: Thailand, China, agriculture, natural resources, cultural intelligence

Background

Adapting to global climate change and volatility challenges scientists and policy makers seeking to ensure food security. Agricultural and natural resource (Ag-NR) scientists must transcend national and disciplinary borders to collaboratively identify, develop, and implement solutions. These scientists will need to speak with one voice to inform policy makers of tools for climate change adaptation that will be of benefit to small and large farmers and natural resource managers. Collaborations to develop and communicate tools for adapting Ag-NR to climate change are likely to occur in English, and will require cultural intelligence (CI) and navigation skills to engage people in different disciplines and nationalities

American Ag-NR students will be the scientists contributing to these collaborations if they have the proper communication and cultural navigation skills. American Ag-NR student numbers are rising, and institutional Ag-NR scientific training is thorough. U.S. universities are increasingly integrating curricula across disciplines, a cross-disciplinary movement reflected in research funding. Concurrently, the U.S. government is encouraging undergraduate study abroad experiences to developing countries (NAFSA, 2009), recognizing that such experiences lead to future international partnerships and collaborative relationships (van der Water *et al.*, 2008).

However, developing nations, where food security and climate volatility are most acute, are historically infrequent study abroad targets for U.S. undergraduate

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* Corresponding author: Department of Plants, Soils and Climate, Utah State University, Logan, Utah, USA.

E-mail: roger.kjelgren@usu.edu

students. For example, top study abroad destinations for American students are Europe, Australia, and New Zealand—those most like the U.S. in language and culture. Even more limiting is the absence of study abroad opportunities tailored specifically for Ag-NR students. The lack of institutional requirements, encouragement, or incentives means Ag-NR students have no models to demonstrate the value of investing in study abroad experiences. The absence of international experiences for Ag-NR students means no CI skills (Earley and Ang, 2003) which improve a person's perception of behaviors and beliefs driven by a different culture. A knowledge and appreciation of those differences and their causes result in better communication practices and working relationships. Absent study abroad experiences and CI skills means missed career opportunities and foregone innovation in addressing key climate change and food security issues; this translates to a clear underutilization of human resources.

Concurrently, non-Anglophone countries invest significant resources to build English communication skills necessary for functioning in the global science arena. Peer reviewed publications are the currency-in-trade of science. Consequently, many developing country universities require their faculty and Ph.D. students to publish their research in English for the international scientific literature. Ag-NR researchers and Ph.D. students in developing countries may have English reading and writing skills that are the result of many years of classroom education. However, a lack of English speaking and listening opportunities often hinders the intuitive grasp of English necessary for precise scientific writing. Bright students from rural areas may never have practiced English with a native speaker, limiting confidence in their English. Weak speaking and listening skills prevent developing the English proficiency to study for advanced degrees. English speaking and listening proficiency is essential to pass the TOEFL (Test of English as a Foreign Language) and IELTS (International English Language Testing System) proficiency exams required for admittance to U.S. and many other international universities.

Utah State University has matched Ag-NR study abroad with building proficiency in English speaking and listening into an undergraduate service learning (SL-USA) program. Service learning is a rapidly growing educational strategy that integrates discipline-

specific learning opportunities with meaningful service by a student that meets a community need (NSLC, 2008). SL-USA combines guided service learning to teach English at a partner university and a study abroad experience. SL-USA provides Utah State University students a low cost immersive cultural experience in the story of another country's agriculture and natural resources. In exchange, the students provide instruction and practice in speaking and listening skills to students and faculty at the partner institution. Because of this service-learning activity, the American students receive an incredibly deep experience, far deeper than most study abroad programs allow. SL-USA is crucial raw material for building a stronger relationship between the American and international partner universities.

This paper describes the SL-USA program as it was developed between Utah State University (USU) and partner institutions in Thailand (Kasetsart University-KU) and the People's Republic of China (Northwest Agriculture and Forestry University-NWAFU). Further, we describe program qualitative and quantitative impacts and outcomes for the partner universities and the USU Ag-NR students who have participated in the program.

Program Description. SL-USA has three stages: pre-departure teaching and cultural preparation for USU Ag-NR students; in-country arrangements and teaching; in country and post return evaluation.

Stage 1. Pre-departure preparation. We have defined two areas of preparation, teaching and cultural, each with a quantitative component.

Teaching Instruction. Students recruited into the program receive 12 hours of instruction from the USU Intensive English Language Institute, with an emphasis on teaching basic English listening and speaking skills. The greatest need at partner institutions is practice in speaking and listening, the two elements of English proficiency Utah State University students, and all American students, do naturally. SL-USA students receive approximately 8 of the 12 hours of instruction in student-centered teaching techniques for an eight-week curriculum, one speaking/listening function per week:

Week 1: Sharing personal and professional information, understanding cultural differences.

Week 2: Explain or narrate a situation.

Week 3: Expressing a preference, need, or want.

Week 4: Compare and contrast a concept or situa-

tion.

Week 5: Articulating and justifying an opinion.

Week 6: Suggest options and speculate on alternatives for a given situation.

Week 7: Summarize and paraphrase the key points of an opinion or narrative.

Week 8: Analyzing and giving meaning to any of the seven points above.

This instruction encourages SL-USA students to develop three component parts of each lesson each week. First, they explain the speaking-listening function and give examples. Second, they identify a particular cultural scenario from either the host country or the U.S. to promote cross cultural understanding so that the USU students and their international students can better understand each other's cultural context. Third, the USU students assign particular activities for the partner students to practice the speaking/listening function in a culturally meaningful activity. These activities range from debates between two student groups on a challenging topic such as gun control in their country, to differences in gender roles in the U.S. and their country, to analyzing the lyrics of a popular English language song.

The objective of the 8-week curriculum is for the SL-USA students to improve the communication competence of the partner institution students. This competence is a combination of improved (1) grammar knowledge, (2) awareness of what is polite, rude or taboo, (3) English discourse in casual, informal, and formal situations, and (4) compensation for other communication skills that might be lacking.

Teaching Evaluation. Also in the 12 week training, the USU students are versed in a rubric developed to quantitatively evaluate speaking and listening progress at the end of the 8-week curriculum, similar to commercial products. This speaking-listening (S-L) rubric has three sequential evaluation steps: giving personal and general information; narrating a personal anecdote in a logical series of sentences; expressing an opinion or taking an abstract position on a given topic. The international student is rated on a scale of 1–9, based on the average of their ability to communicate at each step. We developed an interactive dialogue for the three steps—information, narration, opinion—to focus on specific personal topics of the KU or NWAU students to make the speaking and listening assessment more interesting and educational for the students, whether SL-USA, Thai, or Chinese. For example, the

in-country student gives information on themselves, such as where they are from, parent occupations, if they are first generation university students, and their discipline or major. In the second step they may narrate on of some aspect of their life, such as why they chose the university and their major. In the third step they discourse on a personal topic derived from the first step, such as what impact on their country or discipline they expect to have with their education, and why.

Cultural Preparation. The SL-USA students meet with the USU faculty (authors of this paper) once a week for an hour during the semester prior to their teaching experience. During this time, students are assigned readings about political and cultural topics of the country or countries where they will be teaching. These readings include aspects of culture shock, particularly if the SL-USA student has not been abroad before. We also involve international students at USU to talk about their home country. Basic phrases and expressions in the appropriate foreign languages are taught to help students navigate, obtain food, and be polite and respectful of the host country language and culture. The goal of this cultural training is simply greater awareness of how the host country is different from the U.S., and to expect the unexpected.

SL-USA Evaluation. This preparation has two parts. One is a pre-departure written self evaluation by the SL-USA student to prod them into awareness of their unexamined expectations and biases. Since most have not been immersed in another culture outside the American norm, they do not know what they don't know. This pre-departure self evaluation is a baseline that they can compare against in their post-return assessment.

The other cultural evaluation developed is quantitative. Measuring changes in CI gives the SL-USA student a benchmark to help them better frame and articulate their qualitative changes from the study abroad experience. This includes traits such as curiosity, self-awareness, non-judgment, resilience, and insight (Ng *et al.*, 2009). These are personality traits, in some ways similar to the Myer-Briggs personality indicators, to assess CI and reduce the risk of putting a student in a situation where s/he reacts negatively to a challenging international experience. Thus, we propose to structure a CI assessment tool to reflect the following:

- **Curiosity:** Interested in other cultures and other perceptions of the world;

- **Self-awareness:** Knowledge, interest and curiosity regarding one's own and other cultures;
- **Non-judgment:** Observations and learning efforts that are not filtered and biased by one's own cultural judgments while engaging in another culture;
- **Resilience:** Ability to learn from and respond to both seemingly positive and negative experiences in other cultures;
- **Insight:** Identifying potential opportunities to connect and interact with another culture based on the previous four CI elements, curiosity, self-awareness, non-judgment, and resilience to achieve mutual benefits.

We have identified a commercial survey instrument, the Intercultural Development Inventory (Hammer, 2011) as an appropriate instrument. The IDI offers a unique perspective: it explicitly compares self-perception versus objective assessment of one's ability to function in another culture. It defines this difference as the orientation gap such that a higher self-perception score translates to an overestimation of intercultural competence. We believe that the concept of an orientation gap would be useful to assess students with no prior international experience regarding their tendency to underestimate how difficult it would be to function in another culture.

We will be working with the IDI on two levels. One is the concept of insight, defined as the ability to not only see but also seize opportunities. This means identifying a need, in this case in Ag-NR, or an issue in another culture that students, programs, or institutions such as USU could meet with existing expertise, to mutual benefit. The SL-USA program is an example of seizing the opportunity of addressing the need for better training in spoken English in Asian universities while giving native English-speaking USU undergraduate students an immersive international opportunity with minimal extra training.

The other level is explicitly relating CI to the scientific method. Cultural intelligence is a natural fit for those in Ag-NR, or any science for that matter, because it parallels the scientific method: self-awareness underpinning unbiased observation leading to informed action. Self awareness and unbiased observation are the basis for insight/hypotheses that lead to mindful choices and actions, data collection, resilience to setbacks, and ultimate insights and conclusions. Thus international academic exchanges that build CI not only

enhance scientific ability in students, but also give both students and faculty a framework for meshing with other disciplinary and societal cultures. In turn, meshing with other cultures is the basis for creating the sustainable partnerships that produce the answers to biodiversity loss and food security climate volatility (van der Water *et al.*, 2008).

Stage 2. Partner Institution Procedures.

Scheduling. At least two SL-USA students go to each institution each year to provide mutual support in adapting to a new culture. SL-USA students pay their own air fare to the host countries of Thailand or China. The SL-USA experience is scheduled during the USU summer break, May-August. Synchronizing with the Thai and Chinese academic calendars has been challenging; since the first semester of the Thai academic year starts 1 June, the SL-USA students arrive in mid-May, get settled, then begin teaching shortly after the start of the semester. The Chinese academic year is more difficult, and closer to that of the rest of the world: starting 1 August and ending 1 July of the next year. Consequently, the SL-USA students arrive at NWFU as soon as possible after the USU semester ends in the first week of May such that the teaching schedule is somewhat truncated.

Host institution responsibilities. The partner institution is expected to provide services in exchange for the teaching services of the SL-USA students. First, a host institution faculty member or administrator—who should be the main collaborator with USU—needs to be the main authority point of contact for the SL-USA students. This person negotiates program details with USU, and then assumes responsibility for the SL-USA students during their stay, ensuring their well-being and safety; reciprocal of the responsibilities USU would assume should a partner institution student stay at USU.

The collaborating faculty member or administrator then appoints a graduate student or staff person who functions as a day-to-day mentor for the SL-USA students. This mentor helps SL-USA students in language interpretation, navigates the administrative process of bank accounts, health care, food, and checks in with the SL-USA students on a daily basis. This mentor is crucial to the success of the SL-USA program because they facilitate getting past culture shock so the SL-USA students can focus on teaching and understanding the culture.

The host institution also provides housing for the

SL-USA students. Since both KU and NWFU have dedicated international dormitories, the SL-USA students gain an even richer globalizing experience by interacting with students from a large number of developing countries studying at KU and NWFU. The host institution does not cover food expenses; since the cost of eating is low in both Thailand and China relative to the U.S., the SL-USA students absorb food costs and personal expenses along with air fare.

The host institution also provides field trips to educate SL-USA students about the major agricultural and natural resource issues, in this case in tropical Thailand and semi-arid north central China. The field trips to date have ranged from 2–3 over the eight week stay to nearly every weekend. These field trips are crucial to the SL-USA experience in providing insight into the key Ag-NR issues in the host country that simply would not be possible to experience from a more conventional short term study tour.

Finally, optional services provided by the host institution have sometimes been language instruction and paying the students for teaching. Fitting in Thai and Chinese language instruction for international students studying at KU and NWFU has been difficult because neither institution offers short term introductory courses for non Thai or Chinese speakers. Thus the SL-USA students learn the language to the extent possible through informal interactions with their mentor and students. Both institutions have occasionally paid for the English teaching; however, we discourage this because it places too many expectations by the host institution on the SL-USA students for a specific outcome.

Teaching Procedure. The target audience in both Thailand and China has been graduate students and MS-level early career junior lecturers. The host institution charges these students from \$30–\$50 USD tuition for a 3-hour per week course taught by the SL-USA students. NWFU has used the tuition to pay for field trips, while KU has refunded the tuition to students who have attended 80% of the class periods.

Each SL-USA student teaches at least one course, three hours per week, for eight weeks. The courses are usually scheduled in either late afternoon or early evening to minimize conflicts with class or work schedules of the KU or NWFU students. Prior to classes starting, the two SL-USA students interview all the students interested in taking the course using the S-L rubric for three purposes. First, they assign an S-L

rubric score, 1–9, and group the students into higher and lower existing English proficiency so that one SL-USA tailors lessons and teaches one proficiency group, and the other SL-USA student prepares for and teaches the other proficiency group. Second, the initial interview S-L rubric score serves as the benchmark against which the final score can be compared. Finally, the initial interview provides contextual insight for the SL-USA students to understand the background their students come from.

SL-USA students in general follow the teaching curriculum taught during pre-departure preparation. They have substantial latitude to adapt and modify the curriculum, and certainly add new cultural topics and activities that provide a library of resources for future SL-USA students. At the end of the eight-week period the SL-USA students administer the final S-L rubric speaking/listening evaluation. They also give the students a subjective evaluation form where they rate the quality of the SL-USA instruction and how much they learned.

Stage 3. Evaluation.

We use both subjective and quantitative evaluation tools to assess English speaking and listening improvement by the KU and NWFU students, and changes in CI of the SL-USA students. Engaging both types of evaluations, the SL-USA student is exposed to research, explicitly linking CI to the scientific method.

SL-USA Evaluation. SL-USA students write a post-return assessment of their experience by comparing themselves to their pre-departure self assessment; the post assessment will always include pictures to create a visual essay of their experiences. Also on return, we will administer the IDI instrument to the student to quantify changes in their CI, particularly in increasing awareness of their orientation gap.

Host Institution Student Evaluation. The Thai and Chinese students assess how much they subjectively believe their English has improved. They also fill out a rating sheet similar to how most American students rate their course, including room for comments, although this has been difficult to implement on a consistent basis. Commenting freely and critically is typically not part of the Confucian subtext of both cultures, so these ratings are generally quite positive and not necessarily informative. The IELTS rubric provides a more direct and credible measure of the impact of the SL-USA teaching in improving English speaking and listening skills.

Administrative evaluation. We discuss with our collaborators at KU and NWAUFU the impact of the program. Ideally, the SL-USA program builds a stronger relationship and partnership between USU and KU and NWAUFU that, from a larger perspective, can lead to other academic and research collaborations. At NWAUFU the SL-USA students are administered through the host institution international office, separate from and not necessarily reinforcing connections amongst research colleagues. At KU, the SL-USA students are administered within their Faculty of Agriculture, resulting in stronger academic and research connections.

Program Outcomes and Impacts

Outcomes. The SL-USA program has operated at KU in Thailand for four years, and at NWAUFU in China for three years, with the number of USU students participating ranging from 1–3 each year (Table 1), split between male and female students. While most students have been from USU colleges of Agriculture and Natural Resources, one engineering and two liberal arts students have also participated. We did not have the IDI instrument available for the first four years, so a quantitative measure of the study abroad experience for SL-USA students is not yet available, but expect to implement it in 2012.

The development of the program over four years has been a rapid learning process. The inaugural 2008

effort in Thailand focused on the teaching of English as a foreign language, including reading and writing. While no specific survey or impact data was collected that year, from KU faculty and student feedback emerged a clear emphasis on teaching speaking and listening skills. This message was reinforced at NWAUFU and KU in 2009, where we subsequently shifted focus entirely to teaching speaking-listening skills and adopting the IELTS rubric to measure improvement.

Level of students taught varied somewhat between Thailand and China (Table 1). Mostly graduate students and a small number of junior lecturers sought to improve their English at KU, while around 75% of NWAUFU students attending were upper level undergraduates. Interviews with the NWAUFU students showed that this higher percentage of undergraduates attending desired international English proficiency in order to study abroad, while Thai students wanted to meet internal English proficiency standards in order to graduate, or perform better scientifically in the case of lecturers.

Of note is that women consistently outnumbered men in both China and Thailand from 2–4:1. Greater female motivation to improve English is consistent with their higher numbers in general across Thai higher education. More female students in China is a bit surprising because the gender ratio is more equal across the NWAUFU campus, but our experience through this

Table 1. Descriptive statistics of the number of USU Service Learning — Undergraduate Study Abroad students participating since program inception, number of host country students taught by level, and number of host country students who are first generation and first contact with native English speakers.

	SL-USA student gender, number	Host Country Students					
		Number	Undergrad	Grad	Lecturer	First	
						HE ¹	ES ²
Thailand							
2009	M, F	31	0	71	29	—	—
2010 ³	M, M	20	0	70-	30-	—	—
2011	M, M	44	19	76	5	—	—
China							
2009	M, F	52	62	38	0	76	69
2010	M, F, F	19	74	21	5	58	—
2011	F	12	42	33	25	42	55

¹ First generation in higher education

² First experience with native English speaker

program is that women are more motivated to learn English than men.

Collecting background data on students such as home town, parent careers, family university history, and interaction with native English speakers was important to help the SL-USA students understand the context and motivations for their students to take the class. However, collecting background data at NWAUFU was somewhat more successful than at KU because of greater organization, although at both institutions the initial acclimation to a new culture made it difficult for SL-USA students to focus on data collection. In addition, 2010 civil unrest in Bangkok delayed the start of classes, increasing organizational challenges. The approach in China was generally more systematic, resulting in greater background data collection that told a compelling story about the motivations of the NWAUFU students. Between 66–75% were the first generation of their family to attend university, and given that many were the only child, and often their parents were farmers or laborers (data not shown), these students carried the weight of familial expectations for success. However, a majority had never interacted with a native English speaker, so that this course was their first opportunity to practice their spoken English. We plan to emphasize more rigorous collection of background data in the future, and incorporate as topics in the S-L rubric where students are asked to expand on a topic, and give an opinion.

Finally, our understanding of expectations for our partner institutions has evolved, particularly the importance of providing hosting support. During the first year, two students also traveled to a partner agricultural university in Vietnam where we hoped to establish a teaching program, but had not established adequate mutual understanding. The SL-USA students were not sufficiently prepared for the less developed conditions at this particular campus, and the partner institution did not provide satisfactory faculty oversight or a student mentor. The students lasted a week before requesting to return to the U.S.

The other reciprocal services provided by the host university to the SL-USA students are still evolving. Providing housing has been an attractive element of the program to SL-USA students in terms of lower costs. Thai and Chinese language lessons have been less successful at each institution because of the absence of a short term introductory course that fit with the SL-USA student schedule. Immersion into the agriculture-

natural resources story through field trips in each has been partially successful to date. At KU the field trips have had enormous impact on the SL-USA students, but are dependent on a core of very dedicated graduate students working within the lab of our main KU contact. When personnel in this lab change, it is not clear that the field trip activities are sufficiently imbedded in the academic structure to continue. At NWAUFU, the SL-USA students have been administered by their international programs office, completely separate from the Ag-NR units on the NWAUFU campus. Consequently, the field trips have been more conventional tourism than an inside look at Chinese agriculture.

The course fee charged at both KU and NWAUFU is 15–30 USD, a significant student expenditure in both countries. In Thailand, almost all students met the 80% attendance criteria and were reimbursed the fee. At NWAUFU, the fee has been used to pay for field trips. However, in 2009, NWAUFU charged approximately 80 USD and advertized the SL-USA course as specific preparation for a major commercial English proficiency exam, including reading and writing. These increased expectations placed an unreasonable burden on the SL-USA students that resulted in a more transactional and tense relationship with the NWAUFU students that diminished the quality of the USU students' study abroad experience.

Impact. Subjective rating by the KU and NWAUFU students of their learning experience from the SL-USA students was positive (Table 2). Student ratings were not collected every year, again due to implementation issues and evolving misunderstandings regarding timing, structure, and responsibility at the end of the teaching period. Both KU and NWAUFU students in 2009, when we were able to collect ratings, felt that their English speaking and listening skills had improved. NWAUFU student instruction in 2009 did include reading and writing, but the NWAUFU student assessment indicated that English reading and writing instruction was of minimal benefit. This assessment, and observations by both KU and NWAUFU colleagues that their students already receive adequate English reading and writing training, helped shift the program focus to teaching speaking-listening skills only.

Qualitative comments from the same rating instrument by students at both KU and NWAUFU have been very favorable regarding SL-USA English language instruction. In both countries the students enjoyed be-

Table 2. Student self evaluation of English language ability.

	Thailand		China				
	Pre	Post	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
Speaking	2.4	3.4	0	0	6	23	22
Listening	3.3	4.1	0	0	2	20	30
Reading	2.9	3.7	0	1	26	18	6
Writing	2.5	3.5	0	5	24	20	3

Thailand Kasetsart University, pre and post course on a 1-5 scale (1=very poor, 5=very good), n=15; China Northwest Agricultural and Forestry University agreement with statement "I believe my skills improved in..."

ing taught by Americans of a similar age. Often, the SL-USA students became friends with the KU or NWFU students, interacting socially and gaining greater insight into each other's culture. We have noted that social networking is instrumental in continuing the interactions with the KU and USU students, though unfortunately not with the NWFU students due to government restrictions.

Quantitative measures of the SL-USA teaching showed a modest, positive impact on the KU and NWFU English speaking and listening skills (Figure 1). We normalized variation to the extent possible by having the same SL-USA student administer the pre and post IELTS speaking-listening evaluation, following the same questions, to the same KU or NWFU students. However, we fully recognize that S-L rubric scores are only rough estimates of speaking ability, subject to uncertainty. Nonetheless, the results from the S-L rubric assessment did show that half the students at KU in 2011 and at NWFU in 2010 improved over their initial scores. Overall, the largely undergraduate NWFU students had slightly higher S-L rubric scores than the KU students, but did not improve as much.

Cross cultural understanding is a fundamental motif of this program. Promoting greater understanding between the USU SL-USA and Thai and Chinese students was imbedded in the hands-on activities as a part of the lessons. There was much common ground among all the students due to similar ages and student status. As mentioned, this common ground led to friendships and a much deeper mutual understanding that certainly transformed the SL-USA students. All USU students who have participated in the SL-USA program felt that it was an immensely valuable and worthwhile experience. Indeed, three of the USU stu-

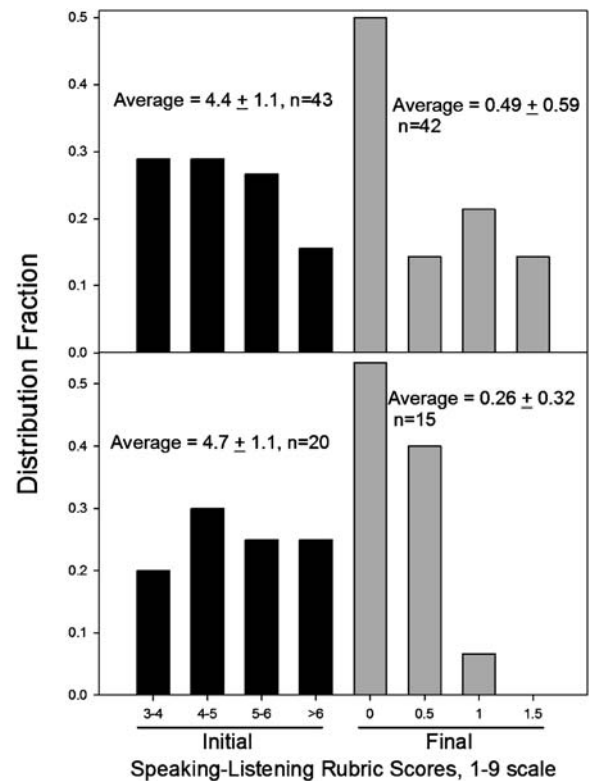


Fig. 1. Initial (prior to instruction) and final (after eight weeks of teaching) Speaking-Listening rubric score on a scale of 1-9, demonstrating improved English speaking and listening skills for Northwest Agriculture and Forestry University in China in 2010 and Kasetsart University in Thailand in 2011.

dents are pursuing graduate degrees in international agriculture, and another an undergraduate degree in international studies.

Analysis and Recommendations

The SL-USA program has evolved over four years, illuminating mutual benefits at multiple levels for USU and our partner universities in Asia. The most immediate is a low cost (flight and in-country personal expenses) study abroad experience for Ag-NR undergraduate students teaching English speaking and listening skills to students and lecturers at partner universities in non Anglophone countries. In exchange they receive housing and a culturally and scientifically immersive experience that would otherwise be unobtainable. In documenting outcomes and impacts of this experience on our partner institution students and SL-USA students, the USU students develop skills in the scientific method, data collection, and analysis. A more intangible but equally important mutual benefit is greater cross-CI between SL-USA students and Thai and Chinese students. A further nuance is that the SL-USA students can explicitly experience the parallels between the scientific approach in documenting the impact of their teaching, and the skills needed for CI that allow them to navigate other cultures.

Program success can be measured by its continuance at both KU and NWAUFU, and the positive impact on the SL-USA students. However, SL-USA cannot continue as an isolated program. It needs to be imbedded in a larger study abroad program that starts early in the student's university career, at the freshman or sophomore level. This imbedding can take the form of an honors program in globalization, or possibly a certificate or minor so that supplemental globalizing courses—such as foreign language or international agriculture credits—would complement an existing major or also serve to meet general university requirements. Early

awareness will allow us to better recruit and prepare the students. In turn, prospective students can better plan for the SL-USA experience in terms of useful academic credits, and financing through student aid.

The SL-USA program would benefit from expanding to other U.S. Land Grant universities. To date we have been challenged to recruit enough students to partner institutions in Thailand and China. While developing a larger program in which SL-USA could be imbedded would boost recruiting, we would be challenged to recruit enough students to expand to other developing countries in Asia. Partnering in a joint program with other Land Grant universities would create a larger and more dynamic pool of students to drive the SL-USA program.

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