Use of Technology to Support Learning and Learning Retention for Participants in a Study Abroad Program

David Krueger, Assistant Professor
Luke Reese, Associate Professor
Michigan State University
409 Agriculture Hall
East Lansing, MI 48824
kruege20@msu.edu
reesel@msu.edu

Abstract
Interest in the role of experiential education on student learning has a rich history in agricultural and extension education. This interest has been fueled in recent years by findings from studies that link experiential learning to study abroad programs (Miller, 1999; Andreasen & Wu, 1999). The importance of experiential learning coupled with a greater number of students traveling abroad and enhanced technological advancements leads to many questions regarding how technology opportunities might be used for student learning. This research was conducted as an attempt to determine the value of using technology as a tool to enhance experiential learning while studying abroad. This qualitative study would indicate that the use of technology does support experiential learning theory and learning retention in a study abroad experience.
Experiential learning is the process that links education, work and personal development. As global education has become more accessible, a corresponding need developed for educational programs that translate abstract ideas of academia into concrete practical realities of people’s lives (Kolb, 1984). Kolb proposed that experiential learning is a holistic integrative perspective on learning that combines experience, perception, cognition and behavior.

Experiential learning is not a new movement in the field of agriculture and extension education. There are numerous scholars who have proposed learning models with the characteristics of experiential learning. John Dewey is considered to be one of the most influential theorists of experiential learning in the past century. As early as 1938, Dewey believed that there was a relationship between the process of actual experience and education (Dewey, 1938). Dewey supported learning experiences where learners are directly in touch with the realities being studied. Kolb and Joplin studies supported the basic theme among all experiential learning models that learning through applicable experiences, with requisite reflection and synthesis, provides for the best education (as cited in Andreasen, 1999).

The theoretical framework for this study draws upon the strengths of theories developed by Dewey, Lewin, Piaget, Joplin, Kolb and Pfeifer/Jones. The model best supporting this study is the experiential learning model used by the Cooperative State, Research, Education and Extension Service (CSREES, 1992). This model follows five steps: 1.) experience the activity; 2.) share the results, reactions and observations publicly; 3.) process by discussing, looking at the experience, analyzing, then reflecting; 4.) generalize to connect the experience to real-world examples; and 5.) apply what was learned to a similar or different situation and practice.

Providing more than a disjointed experience becomes the challenge educators must face when organizing study abroad programs. What are the specific tools available to educators to help learners best experience, share, reflect, generalize and apply what they learn? Most would agree that an overseas experience is worthwhile, but how can educators assist with the learning process? Miller (1999) states, “we must provide the framework for regularly analyzing the experience and forming new concepts and theories, and submitting these concepts to the test of experience.”

Experiential learning in study abroad programs would encompass using many activities and tools. Some of the learning activities researched in study abroad settings include student journal writing, scavenger hunts, etc. (Duke, 2001; Moncrief et al., 1995). Using technology could be viewed as one tool to link experiential activity to real-life experience. Andreasen (2001) used an Internet supported class website in a study abroad experience. The authors of this study also used similar Internet technology.

The authors co-instructed Michigan State University (MSU) study abroad programs to Australia and New Zealand in 1998, 1999, 2000 and 2001. For the purposes of this study, only the 2000 and 2001 MSU programs were studied. The three-week summer program encompassed 21 days of travel on the north island of New Zealand and from Sydney, Australia to Mooloolaba, Australia. Ground transportation moves the participants almost daily throughout the program, so Internet connectivity options constantly change. The program progressed from a meager use of technology in 1998 with lots of trials and tribulations to significant Internet technology use in 2001. Andreasen (2001) used a WebCT courseware to create a sophisticated World Wide Web-based educational environment. For
the MSU programs, the researchers used the World Wide Web extensively without courseware software. The time, staff and financial commitments to augment a study abroad program with technology are significant, and Andreasen (2001) supports this argument. Some techniques described in this document require pre-departure work, and in some cases that work must begin up to six months prior to the program’s departure date.

The 2000 and 2001 MSU programs used many Internet tools to deliver content, foster communication and create dialogue. A course web site contained pages related to the course background, course requirements, orientations, maps, daily itinerary with related links and housing information, daily highlights, participants and related links. The participants’ page contained a digital photo of each participant, email address, a brief biography and a brief description of the participant’s academic background, prior study abroad experience and knowledge of the countries. Researchers collected participant information using Internet forms. The related links and daily itinerary pages contained links to informational sites related to the day’s travel (e.g., weather, maps, sites, businesses and services) plus general cultural and travel information sites. Participants had approximately 170 related links to use for pre-departure preparations. The highlights page is a significant part of these programs.

Each day of the trip two students facilitate. Facilitation includes interviewing all speakers, introducing all speakers, taking notes, taking digital photos and creating a daily newsletter and web page of learning experiences. Facilitators created the daily web page each evening of the trip, and it was immediately posted to the programs web site. In the 2001 program, facilitators also created a pre-departure web page for their day describing anticipated activities and cultural aspects. Once in country, the pre-departure page changed to the actual web page of the day. To accomplish these activities, researchers provided facilitators with digital cameras and laptops with digital photo and html editing software.

In addition to the web page, email and listserv use augmented communication. First, the program had a unique email address for communications to program instructors. Second, a closed listserv was used with only the program participants and instructors to facilitate program communications. Lastly, an open subscription listserv was used for family and friends who cared to subscribe and receive the program’s daily newsletter and web page posting notification. In 2000, 23 subscribers joined the public listserv, and in 2001, 22 subscribers joined.

Participants stayed at a University in each country. Researchers also established student email contacts or keypals at each University. In 2000, keypals assignments were on an individual-to-individual basis, and in 2001, a keypal listserv was created for each institution. This activity is logistically complicated by the reversal of the school year calendars thus the reason for using listservs. In 2000, 23 Australian and 2 New Zealand keypals participated, and in 2001, 18 Australian and 15 New Zealand keypals participated.

As one final technology to discuss in this paper, students received a post-travel CD-ROM of the entire web site and all digital photos taken. In 2000 a hard drive damaged in post-trip flight resulted in a loss of some digital photos. Even with the 2000 data loss, the 2000 CD-ROM contained 1118 files or 70MB, and the 2001 CD-ROM contained 2053 files or 144MB.

Moncrief et al. (1995) and Duke (2000) discussed other student learning and evaluation activities included research papers, reflective journals, group discussions and participation activities besides technology. Students engaged in these experiences as well both years.
Purpose and Objectives

When combining 29 students and 33 students in 2000 and 2001 respectively with 21 days of travel logistics, pre-departure planning, orientations, financial management, and academic preparation, one might question why use technology at all or without a valid reason. Technology use is a significant investment in equipment, staff and time. Do the technology tools and associated learning activities used during a study abroad program support experiential learning and learning retention? Using two years of study abroad experience:

- The objective of this study is to determine if the use of technology supports experiential learning models theory and learning retention in a study abroad experience.

Methods and Procedures

This study employed a qualitative research methodology. Research involved the use of researchers as observers, collection of data through focus group interview and comments submitted by subscribers to a listserv who were following the program.

The population for this study was all 2000 and 2001 participants (N=62) of the MSU “Food, Environmental and Social Systems in Australia/New Zealand” study abroad program. The population included 45 female and 17 male students comprised of 4 freshmen, 16 sophomores, 20 juniors and 22 seniors. Forty-two students were from the College of Agriculture and Natural Resources (CANR) while 20 were from other colleges. Of the 42 CANR students, 23 were majors in the researchers’ department.

For the focus group, ten participants were selected from all the participants who indicated they would participate in a focus group on the particular night selected. Several participants called and canceled prior to the meeting; therefore, the process resulted in a sample of six participants.

To provide an incentive for participation (Krueger, 1994), respondents were offered a dinner for participation. Krueger (1994) suggests that focus group should be homogeneous and should range in size from 4 to 12 participants to allow opportunity for individuals to talk and to provide for practical logistics and management. In this study, the focus group count fell within these limits. As with all focus groups, attendance is voluntarily fueled by personal interest.

The interview was audio taped and transcribed, serving as the primary data source. Field notes were consulted as secondary data. Focus group questions included:

1. What technology (ies) was/were used to facilitate learning during your study abroad experience and how did it/they influence you?
2. Do you feel like you learned more on the day you facilitated and why or why not?
3. Describe your experience with the program’s web page? Did you use the related links pages? How valuable was the participant page for prepping you to travel with this group?
4. Describe your experience creating your daily web page and how that influenced your learning.
5. Describe your use of the programs post-program CD-ROM?
6. Did you have anyone that you knew subscribe to the listserv and follow our trip, and if so what were his or her reactions?
7. How valuable were the digital photos to your learning?
8. Did you have an in-county keypal? Describe this experience and did the process enhance your learning.

Analysis of data followed the procedures set forth by Krueger (1994). First, researchers discussed the interview immediately after the participants departed to underscore the salient observations that surfaced. This debriefing provided an opportunity for the impressions of each researcher to be heard. Secondly, two researchers individually analyzed raw data from interview transcripts. Strips of conversation from the raw interview data were coded to allow for reassembly into the essence of shared meaning (Strauss, 1987). This initial coding was shared between researchers to ensure inter-rater reliability. Finally, researchers evaluated the extensiveness and frequency of the participant responses. Participants used many words (extensive discourse) when they had great understanding of, were experienced with, or were excited about a given topic. Frequent responses across the groups were taken to be most commonly held by participants.

Results

Focus group participants unanimously used Internet technology terms when asked what technologies were used to facilitate learning during their study abroad experience. Terms included Internet, Internet Cafes, web page, email, listserv and digital photos were commonly spoken for the entire focus group time. In certain cases, exact wording differed such as “emails to the entire group” or “pictures requested by families” but were translated into these broad theme word categories. Physical technology hardware devices mentioned included laptops, video camera, printer and digital cameras. To illustrate technology use and its influence, one participant stated:

“It was nice we could get pictures of everybody doing a variety of different things instead of just pictures that you take personally with friends. Then they could be shared with people back home once we posted the page of the day on the Internet with the summary of where we were and what we were doing. We actually had people at home request pictures of certain things.” (student participant)

Student participants, when asked about their facilitation day feelings, commonly used the theme word, “responsibility.” When asked, do you feel like you learned more on the day you facilitated and why or why not, participants said:

“I do, you actually had to pay attention to know what you were talking about because you were in charge of telling everybody… and writing about it. Especially the writing, because we had to sound really educated in what you were doing because you knew that a lot of people back home were going to be looking. A lot of families were watching the web, you really had to take good notes on what peoples’ names were and spellings and that sorts of things.” (student participant)

“I think you learn more because you know that you have the responsibility of being the expert for that day and it was that responsibility that held you to do more and to try harder…” (student participant)

Participants were then directed by a series of six questions to talk about their personal experiences with the program and daily highlights web pages, listservs, digital photos, CD-ROM and email. Describing the program’s general website, a participant stated:

“I thought all that stuff that was listed on there was really helpful like the page that told us what we were supposed to take, what we could expect, what previous groups had done. It really gave you an idea so you weren’t going in blind” (student
When asked questions about daily highlight pages, associated listserv and email communications, three common theme words were communication, family and friends. The learner’s experiential learning activity, published using technology, linked the experience to his or her own real life context, family and friends. The linkage facilitated sharing, discussing, generalizing and applying as experiential learning theory shows. When talking about the daily web page with digital photos, participants stated:

“Knowing that I had to do it at the end of the day was what made me take such good notes because I knew that eventually I’d have to highlight where we were for the web page, write down the weather, what people said, correct spelling of their names and stuff.” (student participant)

“My mom’s class, 4th graders, they’d get so mad if we didn’t have the page up the next day. Where is it? My grandma was the same way.” (student participants)

And people sent over 50 emails to the program’s email address while in travel or post travel with statements like:

“I am so pleased that you took us along on your travels by way of the Internet. I think it should be a requirement that all study abroad programs create a web site and communicate with the families back home just the way your class did.” (listserv or program email)

“We are following your trip everyday. We were getting the report at about 6:30 AM when you were in N. Z., but Australia is much later. It is real exciting for us to follow your trip. To read about where you go and what you are seeing. It is a special treat to see you in some of the picture...” (listserv or program email)

“Everyone gathers around my desk in the a.m. to see what the group is up to. They can't believe the awesome experience you are living. The entire family is following your trip via internet. Keep up the great pictures.” (listserv or program email)

“Just a quick note to say how much I appreciate being able to travel along with you vicariously! I've always wanted to visit New Zealand and Australia--and will some day--so this is a great way to 'try before I buy!'” (listserv or program email)

“Hello to everyone from all of us here in (city in Michigan) and watching your treks in agriscience class!” (listserv or program email)

“All the classes are taking a mini-tour of New Zealand this week when they come to the library. I have the CPU connected to my big screen TV and we visit the daily highlights, look at the pictures and learn about the country. The kids have really been enjoying this. I'm learning lots about the country as well. I think I'll do New Zealand this week and Australia next week. They all said to tell you "Hello" and keep sending great pictures! Staff have been enjoying the tour as well.” (listserv or program email)

As a general summary to the web and digital photo comments, one participant probably said it best by:

“I couldn’t believe how many comments I hear from people, from parents to relatives to friends like all these people that watched it every single day while we were gone, you know.” (student participant)

Participant discussion around the use of assigned keypals and the post-travel CD-ROM could best be described with the theme words, helpful and remember. Keypals are important for pre-travel experiences and real world associations as one participant states:

“I thought it was really helpful to email them beforehand because I emailed with both
of my people and they kind of set it up for me, you know it’s like how warm is it there, what’s it like, what can I expect, what are we going to do when we get there… So it kind of taught me a little bit about the country from a local perspective, something that you can’t really get from the Internet, rather from someone who actually lives there. And I even emailed her a couple of times after we got back too I remember.” (student participant)

The CD-ROM is one technique that preserves the continuum of experiential learning theory. Two of the participants stated:

I looked at it actually a lot, I even brought it to work with me and I looked at it that day and I’ve looked at it a couple of times since then. (student participant)

I like to share it with other people. Yeah. Because it’s got so many pictures on there and so easy to take around. (student participant)

**Conclusion and Educational Importance**

Many emails and focus group comments contained the words mom, dad, aunt, uncle, keypal or friend. All of these individuals are real in the world of the student learner and their life experiences. As experiential models would indicate experiential learning is comprised of a continuum of experiencing, publishing, processing, generalizing and applying. With the use of technology, students on a study abroad experience can be kept in contact with their real-world environment context. Their world environment also feeds back into their processing, generalizing and applying which ties back the CSREES experimental learning model. Miller (1999) states, “Only experience that is reflected upon, seriously, will yield its full measure of learning and the reflection must in turn aim at testing the newly refined understandings by further experience.”

Technology use in a study abroad program is a significant investment in equipment, staff and time. However, this qualitative study would indicate that the use of technology does support experiential learning theory and learning retention in a study abroad experience.

**Bibliography**


