Collaborative Mapping: Google Maps for Language Exchange

Kiyomi Fujii
University of Arizona
kfujii@email.arizona.edu

James A. Elwood
University of Tsukuba
elwood.jim@gmail.com

Barron J. Orr
University of Arizona
barron@email.arizona.edu

Abstract

One of the many aspects of the burgeoning world of cloud computing, Web 2.0 (e.g. Google Maps), provides an engaging classroom tool that allows student production to be easily exhibited publicly in what Shulman (1997) dubbed the 'capstone experience' of a learning endeavor. Through the use of Web 2.0 innovations that facilitate place-based communication and social networking, preliminary work suggests it may be possible to encourage language learners in two different countries to interact more, learn more, and engage further in cultural exchange on their own initiative. This paper explores a language exchange activity, using Web 2.0 technology, between university EFL (English as a foreign language) students in Japan and JFL (Japanese as a foreign language) students in America. The authors developed a novel approach to encourage informal language learning through the use of Web 2.0 innovations that facilitate place-based communication and social networking. The approach applies a traditional typing-and-composition lecture to an activity where students interactively and collaboratively map and describe the locations of favorite campus sites using Google Maps. The students then have the option of linking their mapped locations and text to a course-based personal blog, allowing interaction with counterparts overseas. Combined, these Web 2.0 media help the instructor encourage students to create a learning community with the opportunity for language exchange with native speakers. The details of developing collaborative class maps will be explained, along with challenges encountered in implementing the program.

Keywords: Technology, Google Maps, language exchange

1. Introduction

The fundamental, homologous relationship between language and culture first proposed by such pioneers of modern anthropology as Franz Boas, A.L. Kroeber, and Edward Sapir influences the way we think about the world (Duranti, 1997). A core aspect of increasing understanding across languages and peoples is based on cultural engagement, which requires linguistic participation. While the need for foreign language learning is no longer contested in our increasingly globalized world, considerable challenges remain. Even as the total number of undergraduates studying foreign languages is on the rise, the proportion of the total students enrolled declined from 16.5% in 1965 to 8.6% in 2006 (Furman, Goldberg, & Lusin, 2007). Moreover, the global financial situation has put additional pressure on instructors through increased class sizes and/or decreased in-class contact hours, requiring expeditious use of all aspects of language acquisition and culture exchange, particularly those outside the classroom. This requires capitalizing on advances in emerging theories of language acquisition and new thinking on understanding and optimizing the informal learning that occurs outside the classroom, where as much as 75% of learning takes place (Conner, 2010).

The potential channels of communication have also changed in ways

that facilitate and even promote the crossing of cultural and linguistic divides. The evolution of online functions from the linear, one-way presentation of static web pages (Web 1.0) to dynamic information sharing and collaboration (Web 2.0), at any time or place, can normalize language and cultural exchanges among peers. Our capacity to influence language learners beyond the classroom has increased as Web 2.0 technologies not only encourage interaction, but also facilitate user-generated content and collaboration. These innovations can potentially be used as learning tools to stimulate students' development of language skills and intercultural competence (Byram, 1997). Despite the growing call to exploit these technologies to support pedagogy, there are few examples thus far of their effective implementation in foreign language programs (Simon, 2008).

Our research approach is based on the convergence of intuitive yet revolutionary developments in our understanding of the language-culture nexus and educational theory, which can be briefly described in terms of three key elements. The first is the core concept that language communicates through culture even as culture communicates through language (Silverstein, 2004). Second is the fundamental educational theory shift from breadth and memorization to depth and understanding, which acknowledges that meaning stems from the learner rather than from educational content, referred to as the human constructivist model of teaching and learning (Mintzes, Wandersee, & Novak, 1998). Third is the focus on targeting the self-directed learning that goes on outside the classroom, guided by personal interest and need (Gibbons, 2004) and free-choice education (Falk & Dierking, 2002). This approach is also technologically innovative, encouraging engagement, motivation, and activism through interactive, collaborative and place-based virtual learning environments.

Our research builds on assessments of the impact of Web 1.0 innovations such as e-mail (Barson, Frommer & Schwartz, 1993), efforts to encourage web-based language-learning networks (Griffin, 2006), and assessment of language learning in virtual environments like "Second Life" (Hislope, 2008). The specific idea we tested originates from previous research on the Online Language Environments (OLE) web-based instructional tool with the aim of developing students' speaking proficiency in elementary Japanese (Fujii, 2009). We found that online OLE tasks allowed students to have their pronunciation and fluency checked while creatively using the target language. Those encouraging results suggested the possibility of reorienting traditional in-class activities in ways that encourage further use of the target language outside the classroom.

Noting the exceptional growth in students' use of Web 2.0 innovations such as blogs, instant messaging, and social networking, we began to explore ways to incorporate these technologies in language instruction. We developed a novel approach to encourage informal language learning using Web 2.0 innovations that facilitate place-based communication and social networking. Based on our preliminary work, we believe it may be possible to encourage language learners in two different countries to learn and interact in a virtual, but culturally-relevant context on their own initiative. Blogs and social-network tools provide the potential for multiple exchanges with multiple correspondents, a significant advancement beyond the traditional one-to-one pen-pal approach. Moreover, recent developments of the Google Maps online application permit even novice users to create maps individually or in collaboration with others, irrespective of location. The

maps include high-resolution satellite imagery, further enhancing the context within which communication takes place. Zooming in far enough initiates Google's StreetView tool, which brings users to ground level via high-resolution, 360° imagery from many streets across the globe. We hypothesize that language learning and cultural exchange will be enhanced and sustained among learners in two cultures once given the capacity to a) visualize their counterparts' world through physical/cultural landscapes, and b) communicate in near real-time in the target language.

In this paper, we introduce our Google Maps informal language learning activity and present data on student perceptions of the activity. We also address challenges we encountered and offer an outline for future research on this particular cloud application.

2. Google Maps activity

Our initial research focused on enhancing the traditional typing-and-composition assignment given to students from the first-year Japanese course at the University of Arizona (UA), by asking students to create a map of favorite campus sites. The purpose of this assignment was to practice typing in Japanese and use learned structures to describe places students wished to introduce to counterpart native speakers of the target language. We created the opportunity for exchange with other students by making it possible for them to place their work on a collaborative map, using Japanese, and share it with Japanese EFL students at Tsukuba Gakuin University. Freshmen students from Tsukuba Gakuin University similarly plotted a map, using English, of interesting places around their campus to share with UA students. Thus, this activity allowed American students, using the University of Arizona as an example, to acquaint students from Japan with what U.S. universities in general are like and for students from Japan to reciprocate. Furthermore, we bolstered the "in class" aspect by facilitating communication and exchange among these students beyond the classroom by providing an interactive capacity to comment on their respective maps using blogs linked to the mapped campus locations.

To conduct the Google Maps activity in class, the course instructor created a collaborative base map by using the "My Maps" function on Google Maps, and then sent invitations to the students with the request that each identify interesting campus locations to map before class. To guide this effort, as well as the in-class activity, the authors created a handout detailing the seven steps necessary for the students to make their maps. In the handout, Steps 1 and 2 explain the intricacies of creating a Google account and joining the class collaborative map. Having successfully done so, Steps 3-5 address how to access and use the map. Finally, Steps 6 and 7 explain details of editing and enhancing the map. The steps are the following:

Step 1. Setting Up a "My Maps" Google Account: Students receive an email message auto-generated by Google Maps to their school email account with the subject "I've shared a map with you (title of the class maps such as アリゾナ大学キャンパスマップ [Arizona University campus map])." For this assignment, we ask students to create an individual account associated with their school email address for easier management. When students click a link provided in the email, they arrive at a page where they can create a Google account and have an "Account Creation Confirmation" sent to their email address with the subject "Google Email Verification." They need to click the link provided in that email message to verify their account.

Step 2. Accepting the Invitation to Collaborate: Students need to return to "I've shared a map with you" email message and accept the invitation to collaborate by clicking the link at the top of the message.

Step 3. Opening the Collaborative Map: Completing steps 1 and 2 will lead students to open our shared map, but if for some reason it does not open, we ask students to go to the main Google Maps website and to login by clicking the "Sign In" button on the top right on the Google Maps website.

Step 4. Open "My Maps": Clicking the "My Maps" icon, located toward the top left, causes the "My Maps" page to appear.

Step 5. Navigating: Using the zooming and panning tools on the map students can navigate to a place of interest. In addition, typing a name of the place in the "Search Maps" bar will zoom in and give a selection of publically available maps. However, if the "Search Maps" button is used, "My Maps" needs to be selected again to resume work on the collaborative map.

Step 6. Editing: To create map content manually students can select the "Edit" button to enable the basic editing tools on the zoomed-in map. To make maps describing a building or place students need to click on the placemark mapping feature in the top left-hand corner and click to drop the placemark on top of the building and, after dropping the placemark in its correct location, click it to open an information bubble where they can place the short composition they have written about the interesting campus location they have selected to map. We asked students to type their last name in the text box so that they can find their information bubble again from the generated Table of Contents (TOC) on the left-hand side of the screen; since more than one person may describe the same building there is a possibility that they open another student's information bubble if they only look for a building name or the placemark.

Step 7. Enhancing the map: Changing from "Plain Text" to "Rich Text" allows the students to add and format attributes, for example adding web links and pictures.

Figure 1. The UA campus map created by UA students of Japanese at http://maps.google.com

In the exercise conducted at UA, the students wrote descriptions of campus buildings in Japanese (their target language) using learned structures, obtained photographs and weblinks associated with the location they selected, and then added these to the collaborative, interactive map (Figure 1). The students then linked their mapped locations and descriptions to a course-based personal blog (also in Japanese), providing the opportunity for theoretically unlimited virtual, context-based interaction with counterparts overseas. Similarly, students in Japan created a map in English to share with UA students, and UA students would reciprocate in English via blogs (Figure 2). The initial blog exchanges start with the mapped location and its description and proceed in any direction the language learner chooses, thus creating an opportunity for informal learning and cultural exchange.

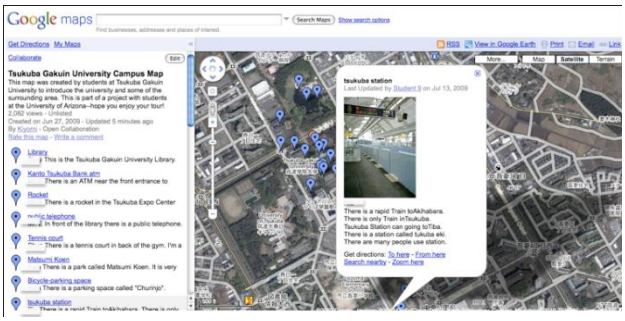

Figure 2. TGU campus map created by Tsukuba Gakuin students of English at http://maps.google.com

3. Feedback from the participants

Participating students were asked to provide their insights on the experience through a brief questionnaire at the end of the semester. The questionnaire focuses on the degree of effectiveness, accessibility and enjoyment of the Google Maps activity. Four of the questions were formed with a range of response options using a Likert-scale with 5-point semantic-differentiation scale anchored by "strongly disagree" (1) and "strongly agree" (5) with a neutral midpoint of 3. In addition, qualitative data were collected with four open-ended questions about making the class map.

The questionnaire yielded positive results that all items, effectiveness, accessibility, and the enjoyment of this activity (Table 1).

In addition to knowing the degree of satisfaction of the participants, we were interested in knowing if this varied between participants from the two universities and their two different cultures and languages. For the results shown in Table 1, *t*-tests were used to check for statistically significant differences between Arizona and Tsukuba university students; the significance results were corrected using an FRD correction (Benjamini & Hochberg, 1995). Whereas some differences existed between the two contexts, with the relatively small sizes those were not statistically significant (although the result for 'enjoyable' was, as indicated, close to significance). Nonetheless, some trends are discernible. First, for all four items the respondents indicated support (i.e., the mean was above the midpoint). Second, students felt that mapmaking helped increase their motivation and benefitted their L2 studies. Finally, both groups indicated the hope that mapmaking would be used again, with the support in the Tsukuba group somewhat stronger.

Table 1. Perceived usefulness of the Google maps activity for facilitating language learning

	Arizona	Tsukuba
Enjoyable	3.59	4.05†
Helped learning L2	3.32	3.32
Increased motivation	3.27	3.55
Want to use again	3.32	3.77

Note. 5-point Likert scale. † indicates statistically significant result ($p < .05$) prior to FRD correction.

We also received comments from the participants. The feedback has been very positive, suggesting this approach not only helps with the immediate learning goals, but also motivates students to reach beyond the requirements of the course. Comments focused on how exciting it was to learn something typically fundamental in such a novel way, and how exciting it was to immerse themselves virtually in the country of their target language. Among the comments were the following:

"It's very simple, but it gets me thinking in Japanese."

"It made me more comfortable with my Japanese."

"Great way to actually see Japan and show others."

"Good typing practice, gives us a chance to make connection oversees and practice."

There were also some comments about technical difficulties such as:

"A little confusing figuring out the technology."

"Google was rather inconvenient."

4. Challenges and Suggestions for improvements

There are intrinsic challenges when using technology, as some of the above comments suggest. Some technical difficulties did occur such as glitches in the university course management system (D2L), which inhibited student access to web mail when we sent out invitations. In addition, the invitation email content was not the same for those who already had a Google account. For the first-year Japanese course we created one map and all students' maps were plotted on the same shared map. This caused overlapping problems since students' learned vocabulary was limited to the same buildings (e.g., the library and students union). Creating section maps (23 students per map) rather than one large map for over 100 students would reduce the potential for duplication.

Some students were proficient technology users and greatly enjoyed this activity. On the other hand, some students' lack of familiarity with technology rendered these tasks difficult to finish in class. Students in Japan had some difficulty completing computer-based activities, since in Japan cell phones rather than personal computers are primarily used to gather information from the Internet. Even though the students in Arizona were familiar with accessing the web using computers, typing in Japanese presented a challenge for the first-year students. Moreover, some first-year students felt more than a single class period was needed to complete this activity.

The different academic calendars (U.S. and Japan) and schedules presented challenges as well. The Japanese academic year starts from April and ends in February, so spring semester in the U.S. would not be optimal, because it overlaps with the Japanese equivalent of summer recess. Planning for this activity must happen well in advance of the new academic year in the U.S., since the fall semester is the most advantageous time to start, when considering both academic calendars.

Through this proposed research intervention, in the future we hope to assess the impact of this approach on enhancing language learning and cultural competency. Assessment will include quantitative and qualitative research instruments at three points in time: pre (baseline), post (after the intervention) and a follow-up assessment (three months later). We expect to see differences with the control group over time in learning, language-use patterns, and cultural competence. At the follow-up evaluations we will examine student blog visit numbers again to see whether they maintained communication with their counterparts after the semester ends, and revisit longitudinal measures. The treatment versus control will help us understand the impact of our approach while the longitudinal assessment will help determine if these impacts are sustained or even grow.

5. Conclusion

In this report, we presented results of a Google Maps activity involving university EFL students in Japan and JFL students in America. As a novel approach to encourage informal language learning through the use of Web 2.0 innovations that facilitate place-based communication and social networking, we are exploring ways to promote context-based language use beyond the classroom. As noted, data showed that participants perceived the activity as helpful and motivating. Given these results, we posit that future implementation of and research about such 'cloud applications' will encourage language learners in various countries to interact and learn more while effectively joining an international learning community. In doing so, we believe they will be more fully able to partake in the

'capstone experience' of this engaging activity.

References

Barson, J., Frommer, J., & Schwartz, M. (1993). Foreign language learning using e-mail in a task-oriented perspective: Interuniversity experiments in communication and collaboration. *Journal of Science Education and Technology* (2) 4: 565-584.

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society, Serial B, 57*, 289-300.

Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Clevedon: Multilingual Matters.

Conner, M. L. (1997-2010). *Introducing Informal Learning*. Retrieved January 28, 2010, from http://marciaconner.com/intros/informal.html#research.

Duranti, A. (1997). *Linguistic Anthropology*. Cambridge University Press.

Falk, J. H., & Dierking, L. D. (2002). *Lessons without limit: How free-choice learning is transforming education*. Walnut Creek, CA: AltaMira Press.

Fujii, K. (2009). OLE (Online Language Environments) Board in Japanese language class. *Proceeding of Third International Wireless Ready Symposium: Digital Technologies in Language Education*. Retrieved from http://wirelessready.nucba.ac.jp/eproceedings2009.html

Furman, N., Goldberg, D., and Lusin, N. (2007). *Enrollments in languages other than English in United States institutions of higher education, Fall 2006*. New York: Modern Language Association of America. Retrieved from http://www.mla.org/pdf/enrollmentsurvey_final.pdf.

Gibbons, M. (2004). Pardon me, didn't I just hear a paradigm shift? *Phi Delta Kappan, 85*(6), 461-467.

Griffin, R. (2006). *The Net works for language learners: Exploring the Internet for high-beginning ESL*. Dubuque, IA: Kendal / Hunt Publishing Company.

Hislope, K. (2008) Language learning in a virtual world. *The International Journal of Learning* 15(11): 51-58.

Mintzes, J. J., Wandersee, J. H., & Novak, J. D. (1998). *Teaching Science For Understanding: A Human Constructivist View*. San Diego: Academia Press.

Simon, E. (2008). Foreign language faculty and the age of Web 2.0. *EdUCAUSE Quarterly, 31*(3): 6-7.

Silverstein, M. (2004). 'Cultural' concepts and the language-culture nexus. *Current Anthropology, 45*(5): 621-652.