Building a Shared Cross-Cultural Learning Community for Visual Communication Design Education

Takahito Kamihira[1], Miho Aoki[2], and Tomoya Nakano[1]

[1] Senshu University, School of Network Information
2-1-1 Higashi Mita, Tama-ku, Kawasaki, Kanagawa 214-8580, Japan
kamihira@isc.senshu-u.ac.jp, ne190003@senshu-u.jp
[2] University of Alaska Fairbanks, Art Department,
P.O. Box 7755640 Fairbanks, AK 99775 USA
maoki3@alaska.edu

Abstract. This paper discusses a case study of an educational online visual communication design project. The project is to develop an online platform, which facilitates cross-cultural communications and educational experiences for college-level students and educators in the visual communication design field in conjunction with information graphics assignments. The online system developed for this project allows students in visual design courses to share their class assignments and evaluate works posted by the members from other countries. The assignments are designed to encourage students to investigate the cultural differences and roles of images in visual communication design. The pedagogical value of the project is evaluated by analyzing user interview and survey results.

Keywords: Cultural Issues and Usability, Human Centered Design, Visual Communication, Infographics, Learning Community, Design Education.

1 Introduction

The importance of visual design for communication has increased in the globalized society. We are surrounded by large volumes of complex information today, but our time and ability to process the information are limited. Humans have used images as a visual language to describe complex subjects [1]. Visual communication design fields have studied effective ways of communication through images. This includes Information Graphics (Infographics) that uses graphics such as charts and maps to represent information [2]. Well-designed Infographics visualize information and enable people to share knowledge beyond language barriers [3][4].

The role of visual communication design has become more significant in many design fields today. The globalization of the economy has increased the necessity of cross-cultural understanding and communication [5]. For example, international social network websites, user manuals for exported automobiles and government publications in multiple languages must cater to users with various languages and cultural backgrounds.

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1.1 Cross Cultural Education in Visual Design

Experiencing other cultures can be very meaningful for students in the visual design field. Designers today must be aware of users with cultural backgrounds different from their own. In order to understand the diverse users, it's crucial for designers to understand cross-cultural issues. Understanding various cultures leads to flexible and innovative thinking in creative process. There is an increasing necessity for studying visual design in multicultural context, but most of college level foreign culture courses focus on language acquisition or general culture studies, especially in Japan. It's critical for visual design programs today to include multicultural components to prepare their students for successful careers in the globalized world.

1.2 Building Online Learning Community

Social Networking Services (SNSs) have been popular in the last decade on the Internet. More than 60% of the Japanese younger generations have used SNSs in 2010 [6]. Some services gained international popularity and have users worldwide. Building and maintaining SNSs with specialized focuses, such as education, has also become easier, because of affordable open-source SNS systems and API.

An SNS for foreign language education, Lang-8 [7] is one successful example of special-focus SNSs. Participants in this service write diaries in the language they are learning, and others who use the language as their native language correct and comment on the diaries. This system is based on reciprocal relationships among the participants.

There are active discussions on the pedagogical role of communities surrounding individual learners in recent years [8]. The social acceptance and technical advancement of the Internet have made forming reciprocal and practical learning communities drastically easier [9].

1.3 Online Community as Educational Feedback System

The most effective way to test one's communication skill is to attempt to transfer information to others and evaluate the efficiency. The development process of communication skills has many things in common with Human Centered Design Process, which incorporates user feedback in the developing process. Appropriate feedback from the others can reveal previously unrecognized problems, help one to seek solutions and improve one's communication skills [10]. Communication skills are developed through this cyclic process of trial, obtaining feedback, reflection and refinement.

Online communities can function as a supporting system for learning activities in traditional classrooms. In visual design education, the cycle is often incomplete, especially in foundation level courses. Many works produced by students are viewed only by classmates and instructors. Often, students don't have the chance or are reluctant to revisit their works after class critiques. Receiving feedback only from the instructors causes students to feel that they are working only for the grade and many lose interest after receiving a grade.

"… I created the image only because it was a class assignment. However, I felt happy when my image communicated ideas (to students in the US). If I knew that someone would use my design, I probably would have felt differently. I get more motivated and become more willing to create something useful." (interview with a Japanese student, 12/28/2010).

Practical projects, involving real-word applications and users, are very beneficial to students, but they can be overwhelming for beginning level students. Expanding the project beyond the traditional classroom setting also requires financial and time commitments from the instructors and schools. Therefore, we need a new pedagogical model that enables students to share their works and gain feedback beyond the classrooms without burdening instructors, schools and themselves. Forming online communities with design courses from other institutions can be one of the solutions. Peer students from other institutions are excellent sources of feedback. The reciprocal relationship in the community can fill the gap in the learning cycle [Fig. 1].

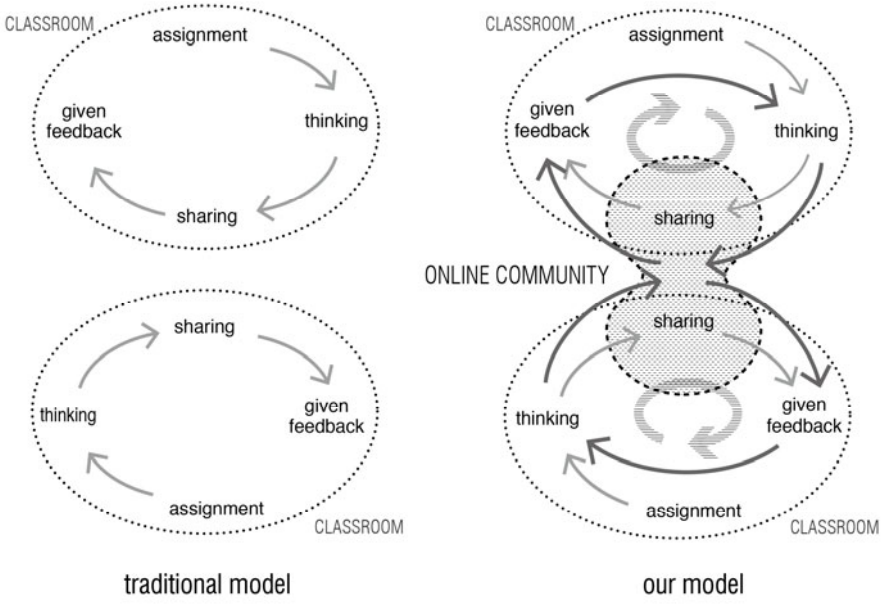

Fig. 1.

2 Project Description

The project is designed to facilitate groups of students and instructors in beginning level graphic design courses in different countries, preferably countries that use different languages. However, the participants have to be able or willing to communicate in one common language. The project consists of two components: classroom and online activities. The classroom component is an assignment which asks them to create an image explaining ideas with minimum use of text. Students are asked to explain a subject that is very common locally but unique to their country or culture. After sharing their images in their classes, students upload the images to the community website. Then students review the works uploaded by their peers abroad

and post their interpretations and suggestions. After receiving the initial reviews, students were able to post re-designed works to the site.

In this assignment, students are “designers”, and the “users” are the students that live in another country. This helps students to think and express visually and develop the ability to critique their own works. By setting the subject to something unique to their area, the assignment also encourages students to deepen their understanding of their own cultures and country.

The assignment has two design challenges for the students. The first challenge is to convey information visually with a limited amount of text. The second challenge is to select visual grammar and vocabulary that could be understood by the users from different cultures. These challenges are an excellent opportunity to introduce the concept of Infographics and the internationalization issues in visual design.

3 Methods

Two online pilot projects were conducted between two universities, a private university in the area of metropolitan Tokyo in Japan and a state university in the US, located in the interior area of Alaska. The first online project was conducted in April to May 2010 and the second one was from November to December 2010. During and after each project, user interviews and surveys were conducted. We evaluated the pedagogical value of the project by analyzing user experiences.

3.1 In-class Assignments and Reviewing Method

On the Japan side, the assignment was “How to xxx in Japan”. Students designed images to explain how to do something very common in Japan but unique for foreign visitors. The students selected from a wide range of subjects, from cooking to religious customs. On the United States side, students were asked to create a graphic temperature scale and explain “How cold is -40°F”.

After in-class critique sessions, students uploaded their images to the “Visual Exchange” website. To prevent the reviews from focusing only on initial impressions, we asked students to write their interpretations and analyze the design in the following three points: first impression, interpretations, and suggestions for improvements. After receiving the reviews, it was up to individual students to reply or to revise their images by incorporating the review comments.

3.2 System and User Interface Development

The first test case used a predesigned online social network service. The second case used a customized version of OpenPNE 3.6 (beta), built in php 5.2.14 on Apache 2.0, with a support from the developer of OpenPNE. The system development and interface design incorporated agile and UCD process. We updated the system and design incorporating user feedback during the project period.

The community website had two main pages, the home, which displayed recent overall activities, and the community meeting page, which functioned as a meeting room for the members. More communities can be added for future use. The uploaded images became “topics” under the community page and users added reviews under the uploaded images. Each user comment displayed a profile photo and associated nationality or location by national flags [figure 2].

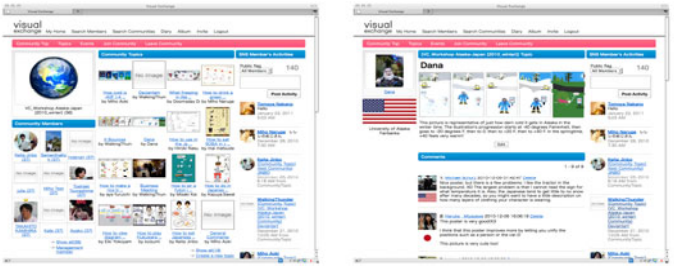

Fig. 2. A screenshot of "Visual Exchange" website used in Nov. – Dec. 2010 exchange

4 Current Results and Analysis

The first pilot case had 27 participants, and the second one had 38. All posted images received comments including interpretations. This indicates that the images functioned as a communicating tool. Students uploaded 21 images in the first case and 14 images for the second one. The average numbers of reviews and replys posted per image was 5.1 in the first case and 4.6 in the second case.

4.1 Examples of Student Works

Example form Japanese Assignment. This Japanese student design attempted to explain Japanese style futon (sleeping pad) set system and its clearing/airing custom. The student tried to explain how to separate, wash and dry the futon and covers along a timeline. She tried to explain the difference in drying time in summer and winter, but it was not well communicated.

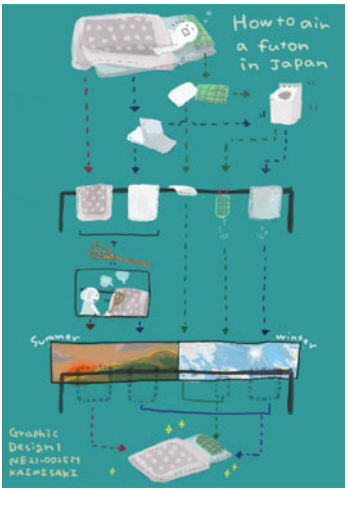

Fig. 3. "How to Air Futon in Japan"

The main confusion students in Alaska had were the seasonal changes of the airing time. One student thought a futon has to be aired from summer until winter while another student thought a half of futon has to be aired in summer and another half in winter. After exchanging ideas, the Japanese student cleaned up the confusing details and indicated the seasons differently.

Example from the US Assignment. This assignment, "How cold is -40°F?" was given to students who live in the interior area of Alaska. Students were given one class to develop their ideas and one week to complete the designs. Figure 4 is one of the images from the assignment.

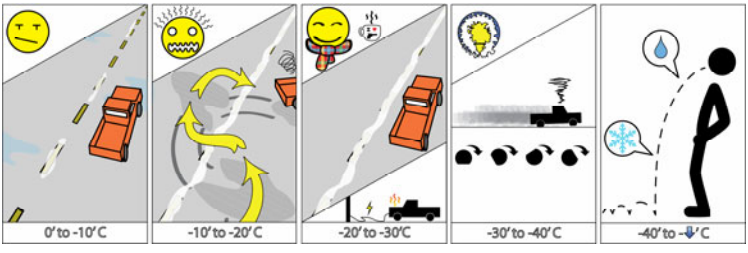

Fig. 4. "It Bounces"

There were six reviews posted by Japanese students for this image. Five reviews were written before the American student posted his explanations. The image attempts to explain the road surface and automobile conditions in various temperature ranges and other phenomena occur in low temperature conditions. The three plates from the left, 0 to -10, -10 to -20, -20 to -30 degrees in Celsius (+32 to +14, +14 to -4, -4 to -22°F) and the plate on the right side, below -40°C (-40°F) were interpreted without major problems. However, no Japanese students understood the plug-in for car heaters featured at the bottom of the central image.

The forth plate, -30 to -40°C (-22 to -40°F), tries to explain "square tires", the phenomenon happen to cars parked outside overnight in cold temperatures. Since this phenomenon was not familiar to Japanese people living in the Tokyo area, it was hard for them to understand.

In the future versions, we would like to build an archive system to keep past student's works and have them available for new participating groups.

4.2 Internationalization and Localization of Design

The reviews posted on the website indicated that students were able to learn issues in the internationalization and localization of visual and interface designs.

Students from the US stated that the right to left order seen in Japanese student works confused them. The right to left order is common in countries that use Japanese, Hebrew and Arabic languages, but not for the countries that use western alphabets. Students learned that the design layout must consider the users' cultural backgrounds.

In the first pilot case, students also learned that some graphic symbols are not universal. A few Japanese students used symbols "o" as good and "x" as prohibited or bad, which is common among Japanese designs, but many American students couldn't understand these symbols, especially in grayscale images.

As already seen in the examples above, objects and phenomena unique to a culture or an area, such as car heater plug-ins, ice fog, snow blowers, shrine gates, futon beating stick and pickled plums were not understood even though there were described visually. *"I've never seen it, so seeing the picture doesn't make me understand what it is." (American student)*

Measurement units were also problems. The student who created the example above, "It Bounces", used Celsius, but other American students used Fahrenheit degrees. Japanese students were not able to understand the temperature intuitively.

4.3 User Feedback

A partially structured interview was conducted with Japanese student participants. The interview was done individually. The following section discusses participants' answers extracted from the interview and its analysis. During the interview, the participants were asked to describe the project's effect on their initial motivation, effect of the feedback on students' view of their works and effect of feedback on students' motivation to revise their works as well as the usability of the website.

Effect of the Project on Students' Initial Motivation. For the Japanese students, this was the first time they communicated with people from abroad on the Internet. One student described the difference between the classroom critiques and the online reviews,

"… My classmates hesitate to say harsh comments, because they are my friends. They don't tell me exactly what they think. On the Visual Exchange site, I didn't know the students in the US. So it was impossible to predict what kind of reviews I would receive. So it was interesting and fun." (12/28/2010, Japanese Student A)

More then a half of students answered that they were curious or eager to communicate with students abroad.

Effect of Peer Feedback on Students' Views on Their Works. Some answers from students suggested that obtaining feedback from people belonging to other cultures can help develop an objective point of view.

"Someone asked me where to put a pickled plum in a rice ball. It's commonsense in Japan, but if you never made it, you don't know that. I realized that there are important things we are not aware of, because we take them for granted. I couldn't imagine that when I was creating the image." (12/28/2010, Japanese Student C)

Many students commented that they were not able to see the assignment project from users' point of view first. The comments similar to the quote above indicate that the online community functions as a feedback system in this cross-cultural context. However, the project needs a scheme for encouraging students to write more productive reviews for works that were already well designed.

"Most of the comments were like, 'everything is nice!' So it's hard to respond. If they pointed out shortcomings of my design, I could have used the comments to improve my work. But I can only say 'thank you' to comments like 'nice!'" (12/28/2010, Japanese Student D)

This is similar to a problem designers and engineers encounter in usability tests. User comments can reveal problematic parts of the designs. However, when there are no obvious problems, many users become unable to suggest a good direction for improvement. Students need to develop the ability to identify strong points of a design and analyze why the design is good. This ability can help students to see their strong points and develop further.

Effect of Feedback on Student Motivation for Revising Their Works. One of the goals of this project was to encourage students to reflect on their initial designs and revise. We asked students how the project affected their motivation to revise their works.

"I didn't want my work to end when I finished creating it. I want to receive more comments. That motivated me to revise my work. It wasn't just about the grade. I just wanted to feel better." (12/28/2010, Japanese Student E).

"If it's an assignment, I try to figure out how much I have to do (to pass). But if I see it as something useful for my study, not an assignment, I would revise it even if it takes time. I would pursue it till it satisfies me." (12/28/2010, Japanese Student F)

5 Current Issues

5.1 Issues in the Project Content and Logistics

During the two pilot projects, the exchange was done in friendly manner. However, cross-cultural communications could cause misunderstandings and conflicts [11]. On the Internet, lack of non-verbal expressions could lead to serious misunderstandings. Therefore, educational projects should be monitored closely by instructors who keep tight communication with each other.

Language barrier had two opposite effects on this project. The language difference motivates students to think and express visually, but it slows down the reviewing process. In both pilot cases, some Japanese students felt reading and writing in English was overwhelming. According to the user survey, more then a half of Japanese participants felt that writing in English was somewhat difficult to very difficult for them and also felt replying to the comments they received was not easy. For the future projects, a reviewing system that relies less on writing needs to be added to increase students' participations.

Scheduling of the assignment and online participation is crucial for keeping students' motivation high. The more time lags between the completion of the initial images and online communications, the lower students' enthusiasm becomes. We need to control the schedule very carefully or need a scheme to reduce the effect of time lags in the future projects.

5.2 Place for Community Building

Building a community requires its members to communicate with each other. Setting an appropriate "space" for the communications is critical to online communities. In these pilot projects, members engaged in communications outside of the main purpose of the projects. Such communications help participants to feel welcome and be more productive member of the community. Some participants exchanged messages about their personal interests and past works. This indicates that there is a strong need for informal communication space. Creating a place for informal exchange accessible to all users is desirable for the future project.

5.3 Interface Design Issues

The interview and web statistics revealed user errors and tendencies, which were hard to predict before the project launch. We were able to make changes quickly during the project period. For example, the interview revealed that many errors in navigation were caused by the two rows of menus placed at the top of the screen. We also changed the list of the uploaded images from text to icon size graphics, but it was not a useful change for the users. Most users were accessing the items from the list of new arrivals. Users were also attracted to images that had higher review numbers. For future versions, we need a new interface design that can direct users to the images with fewer reviews.

6 Conclusion

An online community can be successfully used as educational forum for visual communication design in conjunction with traditional classroom activities. Students participating in Visual Exchange project gained direct cross-cultural experience through exchanging images and reviews. Students were able to learn important issues in today's design field, such as internationalization and localization, communicating visually and cultural awareness. However, simply exchanging images will not yield good educational experience for students. The facilitators have to keep in mind the issues such as the language barrier and scheduling of the assignment. For future development, we hope to develop this project into a platform which can host multiple institutions.

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