Attitude Change after Taking a Virtual Global Understanding Course

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Abstract—A virtual collaborative classroom was created at East Carolina University, using videoconference technology via regular internet to bring students from 18 different countries, 2 at a time, to the ECU classroom in real time to learn about each other's culture. Students from two countries are partnered one on one, they meet for 4-5 weeks, and submit a joint paper. Then the same process is repeated for two other countries. Lectures and student discussions are managed with pre-determined topics and questions. Classes are conducted in English and reading assignments are placed on the website. Administratively all partners are independent, students pay fees and get credits at their home institution. Familiarity with technology, knowledge in cultural understanding and attitude change were assessed, only attitude changes are reported in this paper. After taking this course, all students stated their comfort level in working with, and their desire to interact with, culturally different others grew stronger and their xenophobia and isolationist attitudes decreased.

Keywords—Attitude Change, Interactive Cultural Learning, Multicultural Education, Real Time Virtual Learning.

I. INTRODUCTION

IN the beginning of the 21st century, there are many unknowns. We do not know and cannot even imagine what the future will bring. However, in this unpredictable world, there are not many people who would argue against the inevitability of two issues. 1) the world is becoming smaller, while boundaries of countries still exist, the cultures, the understanding and the flow of people have definitely transcended national boundaries [13] and 2) technological advances will continue to flourish and we will continuously enter into an ever higher technology world. Based on this assumption, we pioneered several Global Academic Initiatives (GAI) using technology to bring people from the world together in a meaningful and collaborative way [1, 2, 15]. The heart of GAI is a course we named Global Understanding (GU). GAI can be roughly defined here as using state of the art technology such as teleconferencing to create an environment whereby students from different cultures in different geographical locations can be brought together virtually in real time to learn and work collaboratively on some joint project [3, 5, 10, 17, 18]. Since we started the GAI project in 2003, the current world-wide economic downturn has made GAI an even more feasible pragmatic goal to enhance global understanding. Facing economic crisis, it is likely that study abroad will decrease in the near future. Using technology so our students can stay on the home campus to have a personal and direct relationship with students from other countries becomes even more valuable in bringing international experience to our students in a most cost effective way [6].

Specifically, our goal is twofold, to provide: 1) a basic understanding of the culture of some other countries [11, 13, 16]; and 2) an environment where people from different cultures can work together, learn more from being together, collaborate on projects, and develop a sense of trust and positive attitude [7, 8, 17, 18].

The first goal emphasizes the importance of providing a basic understanding of other cultures. As the world gets smaller, we are already witnessing individuals working with others from other cultures in many geographical areas, and unfortunately sometimes this mingling of cultures has led to misunderstandings and undesirable consequences. One way to prevent misunderstanding is to send our students abroad so they can learn about the values and traditions and behavioral patterns of the other cultures. This has long been recognized as a desirable goal, and most universities have study abroad programs. However, in reality, only a very small percentage of students can take advantage of these programs. Of the 20,500,000 students enrolled in colleges and universities in the United States in 2006 [12], 206,000 studied abroad [14]. Although that was a greater number than in any previous years, it represents only about 8% of US students. What about the remaining 92%, how are they to become familiar with other countries and other cultures? There are many reasons that most cannot study abroad. First and foremost is cost, it is expensive and beyond the means of most students to study abroad for one year or one semester. Other inhibiting factors include apprehension about staying in a culture where one does not know the language and where one cannot have the comforts of home; long distance from home; safety factor, especially after 9/11; fear of illness such as SARS; etc. If we

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can bring students virtually from another culture to the classroom here, we can eliminate all these inhibiting factors. The best alternative is to go abroad, but our project is a more feasible, much more cost-effective and safe alternative to study abroad. This model is not only feasible for American students, but also welcomed by higher education institutions from other countries [4].

The second goal emphasizes an increase in positive attitude toward people from other cultures after working and collaborating with students from different cultures. In this day and age, any student can surf the web and can easily find information on almost any subject that is more up-to-date than the notes of their teachers. Furthermore, much of the information on the web is presented in more interesting format than a lecturer standing in from of a classroom, even with a slide show. So, why does a student come to the university for the sheer transmission of information? Universities offer degrees that certify students have the knowledge. If knowledge is the ultimate goal, and if students can get the knowledge via other modes that are more fun and more updated rather than information transmitted in a classroom, why not? In the future, for universities to survive, they must offer something that each student cannot find simply by surfing the web. Universities can offer a collaborative environment where experts on a topic can be brought in, where students can learn to chat and discuss and work collaboratively. This is something one cannot get on one's own. In addition, we foresee employees in almost any organization to be made up of workers of different nationalities. The employee of choice would be one who has had some experience in working collaboratively with foreign students.

In preparation for this project we surfed the web looking for existing examples. We found nothing that will accomplish what we have been developing. While many universities describe themselves as virtual universities, or offer virtual programs and courses, on closer perusal, the "virtual" primarily means online education using only email without visual or audio input. There are many cases where the teacher is brought via teleconference to the students, and students can ask questions, etc. At that time, we did not fine any existing course where students from two countries are brought to the same classroom and faculty and students can have synchronous cross-cultural discussion and interaction. We are happy to report that in 2009 we did find one similar to what we attempted to do [19]. Back in 2003, undaunted, we decided to try a new international course to see whether it can achieve our goals and explore how this new technology will work. The following is an example of the course we developed and a report of results of attitudinal change for students who have taken this course. Results reported here are for two groups: students in the US and all other students combined. Not all foreign partner students returned their post course surveys; therefore we had to aggregate them into one group.

II. METHODS

A. Participants

Participants included 59 American students in 7 sections of the Global Understanding course and 56 students in foreign countries (China, Malaysia, Peru, and Russia) who had completed both the pre-survey and the post survey forms during the fall semester, 2008.

B. Procedure

Two ECU (East Carolina University) Professors, a cross-cultural psychologist or an anthropologist and a network technology expert, visited each partner country to mentor the host partner in the pedagogy and technology of this virtual course. During the visit ECU professors also visited the CEO and the CAO of each partner country to gain their support in providing human and other resources to start the course and to solve any problems that might arise in the future. In the training phase several video links were conducted with ECU to assure that the host country had enough bandwidth and capability to conduct classes via video conference technology. ECU professors also talked to teachers who were interested to help publicize the course and to students to help recruit them into classes. The visit usually took 3-4 days. Upon return, the two partner faculty members started working on the course content, reading materials, and other activities pertaining to the course.

The operational details of the global understanding course at ECU include partners from three other cultures in each section. The 15 week, three semester credit hour course is taught in four-five week sessions, with each session bringing a different partner into the ECU classroom. So the first four-five weeks might be spent with Russia, the second four-five weeks might be spent with China, and the final four-five weeks with The Gambia. While ECU was meeting with one country, each partner was also meeting with another country, so every partner in the partnership family had three partners. This exposure to three other countries not only provides a broader view of the world, but also enabled the students to compare the different "foreign" countries. Students in each country were assigned a partner in each other culture. Each class session was conducted using live video so that students see and hear one another in real time. During the first class of each session the faculty and students introduced themselves to each other and an overview of each culture was provided by the participating faculty member. The subsequent class sessions always started with a short discussion of the major headlines in each country (papers from all countries in English are posted on the website), and students were also asked to keep a daily journal of each class. During the joint sessions, class time was devoted to guided student discussions on the four topics: family; cultural traditions; work; and the meaning of life [9]. Student discussions were conducted in two formats. Half of the students joined in small group, video-based discussion with their partners from the other culture while the rest of the students discussed the same topic individually with their partners. At the end of the session the student partners worked collaboratively to create a joint paper which was

submitted to each professor. From the beginning the two partners emailed each other outside of class frequently to discuss their joint paper and other class and non-class related topics. This same 4-5 week sequence was repeated for the second partner country and the third partner country.

Students participating in the Global Understanding Course were asked to complete both a pre-questionnaire dealing with their expectations about the course, their beliefs about other cultures, and their familiarity and comfort with the technology to be used in the course. At the end of the course, students were again asked to complete a questionnaire. Many of the belief questions were repeated and questions about their satisfaction with their experience in the course were added. These attitudes were measured on a five point Likert scale. In the last week of class a post course survey was administered to all students. It included all the items in the pre-survey, plus a few extra items such as "I plan to continue to email my partner after the course is over" The results presented in this paper are from analysis of the data from these two surveys

III. RESULTS

We would like to state here that the academic results based on tests given in the course showed students in every class have made very satisfactory grades. Students themselves commented that the course was interesting; they "wanted" to learn about the other countries so they spent more time studying. Some even commented that they would like to visit some of their partners. Thus the increase in knowledge about the countries they partnered with can be taken for granted from their very good grades. In this paper we will concentrate on the change in attitude toward people from different cultures.

Data from the pre-test (204 cases, 17 items) were subjected to a factor analysis using principal axis extraction and varimax rotation. Four factors emerged. 1) Comfort with culturally different persons; 2) Desire to work with culturally different persons; 3) Disinterest/Xenophobia; and 4) Isolationism. Two items were excluded from the factor analysis, one on command of the English language and one on the role of America in the world. For each student four scale scores were computed at both times (pre-test and post-tests), based on the results of this factor analysis, with unit weighting of the items. These scores were computed as sums across items, after multiplying by minus one scores on items which loaded negatively in the factor analysis.

Responses from both pre-test and post-test were received from students in the United States (59), China (26), Peru (19), Malaysia (9), and Russia (2). Sixty-four percent of the respondents were women. The mean age of respondents was 19.6 years ($SD = 1.71$). The respondents mean year in school was 2.09 ($SD = 1.09$).

Scale scores were analyzed with a mixed model factorial analysis of variance. The ANOVA factors in this analysis were time (pre versus post course, within subjects), sex (female, male), and country (USA, other). A .05 criterion of statistical significance was employed for all tests.

Comfort with Culturally Different Others. Nine items were included in this scale. Example items are "I would be comfortable with a roommate from another culture" and "I do not like seeing people from other countries come to my country" (negatively scored). Mean scores on the Comfort scale were higher after completion of the course, but the difference fell short of statistical significance, $F(1, 111) = 2.73$, $p = .10$, $\hat{d} = .10$. See the descriptive statistics shown in Table 1. There was a moderately large effect of sex, $F(1, 111) = 12.19$, $p = .001$, $\hat{d} = .69$, with women being more comfortable with culturally different others ($M = 8.88$, $SD = 3.79$, $n = 73$) than were men ($M = 6.21$, $SD = 4.02$, $n = 42$). None of the other effects reached statistical significance.

Desire to Interact with Culturally Different Others. This scale consisted of six items, including "Getting to know people from another culture is generally fun for me" and "If I won a free vacation I would rather spend it in a culturally different country than in my own country." The course had a significant, small to medium effect on these scores, $F(1, 111) = 6.59$, $p = .012$, $\hat{d} = .25$. As shown in Table 1, the students had greater desire to interact with culturally different others after completion of the course than before taking the course.

There were also significant small to medium effects of sex and country on these scale scores, but all other effects fell short of statistical significance. Women expressed significantly greater desire to interact with culturally different others ($M = 23.95$, $SD = 1.78$, $n = 73$) than did men ($M = 23.10$, $SD = 2.62$, $n = 42$), $F(1, 111) = 5.28$, $p = .024$, $\hat{d} = .40$. Students from the United States were more interested in interacting with culturally different others ($M = 23.98$, $SD = 1.92$, $n = 59$) than were students from other countries ($M = 23.28$, $SD = 2.33$, $n = 56$), $F(1, 111) = 4.11$, $p = .045$, $\hat{d} = .33$.

Disinterest/Xenophobia. This scale was comprised of three items: "I do not think it is important to learn about other cultures, but this is the only course taught at a convenient time," "I think it is important to learn about other countries and I am excited to take this course where I will meet students from other countries," (negatively scored), and "Interacting with people from different countries should not be encouraged because it could cause us to question our own values and beliefs." As shown in Table 1, disinterest in the course (and xenophobia) decreased significantly after taking the course, $F(1, 111) = 8.96$, $p = .003$, $\hat{d} = .29$. There was also a large, significant sex difference on this scale, but all other effects fell short of statistical significance. Men were significantly more disinterested in the course ($M = -1.41$, $SD = 1.42$, $n = 42$) than were women ($M = -2.37$, $SD = 0.91$, $n = 73$), $F(1, 111) = 19.61$, $p < .001$, $\hat{d} = .86$.

Isolationism. This scale consisted of three items: "It is difficult for me to feel close to people who have a different religion from mine," "I have no desire to travel abroad," and "If you get to know people in other countries and other cultures, you learn that we are more alike than different" (negatively scored). As shown in Table 1, the course had no significant effect on isolationism, $F(1, 111) = 0.01$, $p = .91$, $\hat{d} = .07$.

There were medium-sized, significant effects of sex and country, but all other effects fell short of statistical significance. Men were significantly more isolationist ($M = -.49$, $SD = 1.56$, $n = 42$), than were women ($M = -1.14$, $SD = 1.24$, $n = 73$), $F(1, 111) = 6.98$, $p = .009$, $\hat{d} = .48$. Students in the United States were significant less isolationist ($M = -1.13$, $SD = 1.43$, $n = 59$) than were students in other countries ($M = =0.66$, $SD = 1.33$, $n = 56$), $F(1, 111) = 3.94$, $p = .050$, $\hat{d} = .34$.

America's Role in the World. ANOVA was also employed to analyze the data from the two items which were excluded from the factor analysis. One item was "Please rate your view of America's role in the world." Response options ranged from "very negative" (1) to "very positive" (5). As shown in Table 1, the course did not significantly affect responses to this item, $F (1, 111) = 0.12$, $p = .91$, $\hat{d} = .05$. The only significant effect was the Time x Country interaction, $F (1, 111) = 4.44$, $p = .037$, $\eta_p = .04$. The simple effects of the course fell short of significance for both groups of countries, the interaction resulting from the effect among students in United States being opposite in direction of that in other countries. For students from the United States, the post-course evaluation of America's role in the world was more positive after the course ($M = 3.46$, $SD = 0.97$, $n = 59$) than before the course ($M = 3.27$, $SD = 1.10$, $n = 59$). For students from other countries the post-course evaluation of America's role was less positive after the course ($M = 3.45$, $SD = 0.87$, $n = 56$) than before ($M = 3.54$, $SD = 0.89$, $n = 56$).

English Proficiency. One might expect that completion of the course would be associated with an increase in English proficiency in students from countries other than the United States but not in the United States. If this were the case, the Country x Time interaction should be significant. This interaction fell well short of significance, $F(1, 111) = 0.02$, $p = .89$, $\eta_p = .00$. The only significant effect was the main effect of country. Not surprisingly, students in the United States rated their proficiency in English ($M = 4.45$, $SD = 0.80$, $n = 59$) significantly higher than did students from other countries ($M = 3.68$, $SD = 0.58$, $n = 56$), $F(1, 111) = 30.65$, $p < .001$, $\hat{d} = 1.10$.

Post-test Only. There were two items that appeared only on the survey administered at the completion of the course. Both involved an overall evaluation of the course, and the students rated the course very favourably on both. One item was "I would recommend this course to my friends." The mean was 4.56, on a scale from 1 to 5. Neither country nor sex significantly affected the recommendations. The other item was "My experience in this course made me want to learn more about other countries and cultures." The mean was 4.65, on a scale of 1 to 5. Country did significantly affect responses to this item. The mean was significantly higher in the other countries ($M = 4.82$, $SD = 0.43$, $n = 56$) than in the United States ($M = 4.49$, $SD = .80$, $n = 56$), $F(1, 111) = 6.26$, $p = .014$, $\hat{d} = .51$.

TABLE I
CHANGES ACCOMPANYING COMPLETION
OF THE COURSE

Scale	Pre M (SD)	Post M (SD)
Comfort	7.67 (4.54)	8.14 (4.49)
Desire	23.31 (2.78)	23.97 (2.41)
Disinterest/ Xenophobia	-2.23 (1.20)	-1.81 (1.68)
Isolationism	-0.84 (1.69)	-0.96 (1.76)
America's Role	3.40 (1.01)	3.45 (0.92)
English Proficiency	4.03 (0.85)	4.12 (0.84)

IV. DISCUSSION AND SUMMARY

Results support our notion that a global understanding course where students from different cultures actually sit in the same classroom, see, talk, communicate, interact and work on a joint project not only enhances greater understanding of people from other cultures, but this understanding actually helps to form more positive attitudes. There are many anecdotes that bear witness to the value of this course. One key example is the comment made by a female student from America after the course was over: "I still do not understand how my partner, the third of four wives in her culture, can be happy sharing her husband with three other women. But, I do believe she is happy, and I do believe that system works in her culture. Dr. Chia, if you taught me this in class, I would never have believed you." The fact that many of the student partners continue to communicate after the class ends indicates that this mind and heart approach to teaching about culture can produce personal interest and friendship. Several students have applied for Study Abroad programs after taking this course and they told us this course was what aroused their interest in going abroad to find out more about other cultures. One student who took this course is a 4.0 Music major; he changed his major and is now enrolled in our Masters Program in International Studies, while working as the student help for this course.

Colleges and universities face numerous challenges as they seek to provide students with diverse cultural experiences so they can succeed in a global community. Nothing can take the place of travelling to another country but in today's realities of continually increasing educational costs and security concerns associated with travelling beyond our country's borders, creating a global classroom with the aid of technology is a valuable educational alternative. Its cost-effectiveness and sustainability make it not only appealing to American universities but also feasible even in the less developed countries. This is especially relevant in this age of global economic depression. Since the inception of this project,

several universities have heard about this and invited us to present it on their campuses so they can adapt this model for their own use [7, 11, 16, 17, 18]. With this paper, we hope these tested virtual global academic initiatives can further spread to other campuses.

In the future we plan to get more data from foreign students so we can see regional differences (e.g. Muslim countries, Asian countries, etc) in these attitudes.

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