Connecting Students Globally Through Video-Conference Pedagogy

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Abstract

This case study from Stanford University's Cross-Cultural Rhetoric Project discusses innovative teaching methods used to meet new institutional mandates for global learning and internationalization. Through designing and building Marratech-software enabled video-conference collaboration stations that can connect classes across five continents, the project learned best practices for implementation of global e-Learning at the university level.

Keywords: global learning, video-conference, pedagogical design, innovative technology in teaching, Marratech

Introduction: The Site of the Virtual Classroom

It is Monday morning at an American University in California, and students arrive at their university classroom equipped with state-of-the art collaboration stations, consisting of plasma screens, web-cameras, echo-canceling speakerphones, and computer stations for accessing a video-conference software program called Marratech. As the students join colleagues in groups of two or three, they open Coursework, the course management software program run by Sakai as a Collaboration and Learning Environment (CLE). From Coursework, they download an advertisement that reflects American cultural values that they had found as homework for today's class. One student has chosen a Nike ad showing a woman's large backside in Spandex accompanied by a poem, while another student has selected screenshots from a Chevy Silverado TV commercial entitled "Our Country." A third student moves the mouse to the plasma screen where the Marratech software is running, showing a whiteboard for writing or uploading images, as well as a chat box and several control panel features. The student clicks on one of the controls and turns on the webcam and the audio for the collaboration station. The other two students download their ad images from Coursework onto the desktop and upload them to the Marratech whiteboard. Then, in small video boxes at the top right of their screen, the faces of students from around the world begin to appear.

First, students from a Swedish University come on the screen. The students say "hi" to the others and start catching up on the events from the past week. It's evening in Sweden, nearly 6 pm, and the students are excited for the contact with America. One Swedish student has chosen an ad from a Swedish bank showing a farmer leaning against a haystack, and he uses the mouse to point to the ad on the shared whiteboard. Next, two students appear in the video boxes from an English-speaking University in Cairo, Egypt. Their voices are clear but they can't hear the American or Swedish students. "Type in the chat if you can hear us," one American student suggests. The student from Egypt types in "I can hear you. Can you hear me?" The answer comes back verbally, "Click on the microphone." Then, suddenly, the sound of an Arabic accent comes across the computer as clear as a telephone connection. "Hi! How are you guys?" The connection has been made; the learning has already begun.

As the student from Cairo will upload an ad for a falafel and bean shop in Cairo, and the students will analyze how the image reflects life in another country across the world, the conversation will soon delve

into serious academic questions, such as particular cultural values or the "doxa" that shape patterns of eating, shopping, resting, and family traditions. Then, students will analyze the ways in which cultural identity or "persona" evolves as a site that is continually socially constructed, not just through national or cultural values, but through media such as ads and through the technological tools that disseminate those ads across the world. For instance, they zoom in the Swedish bank ad, discussing through the Marratech connection the way in which the ad features the Swedish equivalent to the American "average Joe" who illustrates the important concept of *jante*, the traditional belief that one should work hard, should not promote himself above others, should downplay achievements, financial prosperity and otherwise be modest. They will compare the ad to the Chevy Silverado screenshots and then discuss the Nike ad for women's sports as a measure of differing standards of beauty around the world. Finally, the students will decide which ads to write about in a collaborative blog post through which they communicate their learning to a broader global community. In this way, they learn strategies of negotiation, and they will develop cognitive and socio-cultural understandings of how best to communicate in a diverse global learning environment.

This one class, an opportunity for real-time multimodal e-Learning, will be an experience that these students, in turn, will tell their friends about in the dorms, the streets, and the coffee shops of their communities.

Global Learning through Innovation with Communication Technologies

The narrative above reflects a new form of e-Learning that was originally developed as a research project funded by the Wallenberg Global Learning Network (WGLN). While the official title of the grant-sponsored research was **"Developing Intercultural Competencies through Collaborative Rhetoric,"** it soon took the popular name of the "Cross-Cultural Rhetoric Project" or CCR (http://ccr.stanford.edu) The aim of the project has been to develop new methods for teaching and learning through the effective development and implementation of communication technologies that might connect universities across the world. Since its first pilot connections between an American University and a Swedish University in 2006, the project has expanded to connect students at universities across five continents.

The problem that CCR has sought to address it this: Today, more than ever, in the current climate of intensified globalization, students need the opportunity to learn concrete strategies for communicating and collaborating with others around the globe. Universities have increased mandates for internationalization and the development of global citizens. Students need to learn the newest technologies necessary for such global conversations and collaborative projects. Yet too often students lack access to technologically-mediated learning environments, and they do not have the chance to work regularly with transnational audiences. Thus, they do not learn how to work collaboratively on new media texts with others from diverse cultures. These, however, are the very skills and core competencies that students will need in their future professions and in their futures as global citizens.

To meet this crucial need, the Cross-Cultural Rhetoric Project, as a research endeavor and a sustainable teaching program connecting university students and teachers across multiple countries, seeks to prepare students for effective collaboration and communication in global contexts, both within educational institutions and beyond. In essence, CCR's goal is to instruct students in global communication through hands-on intercultural collaboration with partners from across the world.

Thus, as a case study in global learning made possible through innovative teaching with technology, CCR offers one answer to the challenge facing educators today. Specifically, the Cross-Cultural Rhetoric project methodology of real-time e-Learning across diverse cultures offers a new opportunity for global learning that was not possible with previous iterations of e-Learning. Similar to Second Life capabilities for real-time user interactions, the project operates through communication technologies that can be harnessed by students to maximize their own involvement and learning. Specially designed collaboration stations and the Marratech software platform allow students to select modes, frequency, style, and duration of communication across audio, video, chat or text writing, drawing, uploading of text, collaborative authorship, and bodily movement. Such interactions foster cognitive and socio-cultural negotiations that are essential to learning cross-cultural communication and collaboration strategies.

In this way, the Cross-Cultural Rhetoric project aims to foster global citizenship through real-time, high stakes e-Learning in which students are accountable to each other as team members. The particular features of Marratech software – including simultaneous live video, chat, and whiteboard communication tools for multiple team members to negotiate at once – facilitate two competencies, or forms of literacy, crucial for global citizenship in the technological age:

- First, *technological competencies, or digital literacy*, or how to communicate across media and communication technologies;
- Second, *cross-cultural competencies, or cultural literacy*, or how to negotiate across multiple perspectives from various cultural stand-points, to work through differences in approach and values in order to produce collaborative products (texts, images, project designs) that accomplish a shared goal.

This paper discusses the pedagogical methods for Marratech-enabled e-Learning aimed at fostering global citizenship in students from diverse institutions of higher education. After a background section on the literature foundations for the CCR project, the paper explains the methodology, communication technologies, best practices, and assessment data of this case study in global e-Learning. The conclusion offers reflections from students on their participation in this educational practice and proposes directions for further research.

Literature Review: Interdisciplinary Foundations

The theoretical and methodology approach of the Cross-Cultural Rhetoric Project builds on the substantial literature concerning e-Learning in order to optimize student learning in online environments. C.H. Tu (2004), for example, outlines three major constructs for collaborative learning—interactivity, social context, and technologies: "Interactivity concerns the concepts and designs that engage learners in active collaboration. Social context refers to the learner-centered learning community. The third construct details technologies that support and enhance knowledge development and knowledge management" (p.11). By using multiple modalities for e-Learning including simultaneous video, audio, chat, and collaborative authorship, the CCR methodology aims to engage learners in active collaboration and build community. In addition, as Tu (2004) asserts, "The sense of 'community' must be sustained when implementing online collaborative learning" (p. 11). Thus, CCR utilizes a sequence of knowledge development activities, grounded in rhetorical analysis, that foster sustained community. Tu and Corry (2002) propose "Instruction", "Social Interaction," and "Technology" as three major dimensions for e-Learning communities, and CCR bases its methodology on meeting those three dimensions. Corry further postulates that "Four important issues must be considered when integrating online collaboration with instruction: empowering learners, building communities, continuing support, and being patient" (p. 13). The primary of focus must be on the learner, and CCR's use of multiple modalities—video, audio, whiteboard writing, and asynchronous activities—seeks to ensure necessary attention to empowering the student and building community in the virtual learning environment.

In developing a new form of e-Learning that entails simultaneous video, audio, and collaborative composition, CCR builds on new media theory and discussions of digital pedagogy. Scholars C. Selfe and G. Hawisher (1999) call for studies on how technology can address global needs, and the CCR project attempts to explore the use of Marratech video-conferences to bring about deepened understanding of audience to facilitate improved international relations. In doing so, CCR draws on the work of C. Abbott (2000), who has argued persuasively for a re-evaluation of the use of digital technologies in the classroom based on their increasing prevalence as an international mode of communication. In addition, CCR's practical applications of communication technologies in education have been largely informed by scholars such as R. Godwin-Jones (2003; 2005), who discusses fostering productive collaborative exchanges through video conferencing, collaborative blogging, and writing on a Wiki. As Godwin-Jones suggests, asking students to engage with real audience through digital technologies increases their investment and personal accountability in computer-based tasks. The work of R. Fruchter (2003) on globally-distributed teams has also provided a foundation for the CCR project's development of a protocol for small-group collaboration practices. CCR acknowledges the numerous researchers whose own innovative approaches to technological tools in teaching provide a rich base for application to cross-cultural learning environments, and the project hopes that its own research contribution will take teachers and scholars one step further along the shared goal of preparing students for their futures as global citizens.

In terms of the pedagogical theory informing CCR's efforts to aid students in becoming global citizens, the project builds on a foundation of interdisciplinary research from the fields of education, intercultural communication, and rhetoric. Specifically, CCR relies on the educational theory of Freire (1970) by rejecting the "banking model" of instruction in order to advocate instead active, hands-on learning that consists of collaborative problem solving or what John Dewey termed pragmatist pedagogy. Moreover, CCR responds to debates within the field of intercultural communication theory about how best to foster

contact across cultures and communities by emphasizing experiential learning of cross-cultural differences. Specifically, CCR aims to foster what are termed "intercultural competencies," or, as theorists Lovitt and Goswami (1999) define the term, traits of sensitivity and understanding towards others. In order to avoid reinscribing cultural stereotypes, CCR turns to rhetorical theory for a basis in analyzing visual and verbal texts with attention to audience and cultural contexts. Thus, CCR relies upon rhetoric's emphasis on audience, decorum, doxa, and what rhetoric scholars C. Glenn (2004) and K. Ratcliffe (2005) identify as the importance of rhetorical listening; CCR brings this scholarly expertise in rhetoric as an applied art to the debates within intercultural studies concerning best practices for effective cross-cultural communication. Indeed, the faculty involved in this e-Learning project are from departments or programs in rhetoric and writing, although there has also been much interest in applying a rhetorical approach to global learning from the schools of medicine, engineering, law, education, and business at participating universities.

At its heart, then, CCR as a case study in technology and teaching builds on previous research to offer a protocol of global learning through a rhetorically based e-Learning pedagogy. The stakes are high, for, as Larry Samovar, Richard Porter, and Edwin McDaniel argue in *Intercultural Communication,* "successful intercultural communication is a matter of highest importance if humankind and society are to survive."

Research Questions for E-Learning in Multiple Modalities

In the pedagogical design of a methodology and a protocol for classroom practices that could be shared with teachers at a range of educational settings, three research questions guided the work of the CCR team:

- How can students best negotiate and learn about intercultural perspectives through projects that rely on technology-mediated communication and digital collaboration?
- How do technologically-rich learning spaces facilitate or inhibit collaborative activities for globally distributed students and instructors?
- What role does rhetoric and writing play in teaching students to communicate with intercultural audiences in effective ways?

To address these questions, the CCR team developed a methodology to implement digital technologies in pedagogical settings. The methodology locates global learning within collaborative activities that can be used across a range of courses. In each case, the methodology challenges students to examine political perspectives and cultural assumptions. To achieve this end, the team researched the use of technologies such as Marratech-driven video conferencing, collaborative blogs for rhetorical analysis of controversial texts, webforums such as Google docs for peer review of research on texts of cultural significance, and a Wiki for collaborative writing. The rest of this paper will focus on the Marratech video-conferences as a site of optimal e-Learning.

Methodology: Connecting Five Continents

Since September 2006, the CCR Project has facilitated over 80 cross-cultural video-conference connections among students using the Marratech software. Participants now include universities in America, Sweden, Singapore, Australia, Egypt, and Russia, with new partners in Korea, China, Switzerland, and Mexico seeking to join.

In most cases, approximately 15-20 students form into 5-6 teams at each participating university for a two-hour video-conference connection. For workshops with participants from several universities, the students divide into teams with members from each country contributing to each group. For a quarter or semester-long curriculum, students connect between 2-5 times through Marratech video-conference technology in order to complete a number of assignments that work progressively towards developing improving students' intercultural competencies. The arc of the curriculum makes possible communication competence that is distinctly intercultural in implementation, as theorists Chen and Starosta (2008) define it:

> To alleviate the problem in defining communication competence and to apply the concept to intercultural settings, intercultural communication competence can be conceived of as the ability to negotiate cultural meanings and to execute appropriately effective communication behaviours that recognize the interactants' multiple identities in a specific environment. This definition emphasizes that competent persons must know not only how to interact effectively and appropriately with people and environment, but also how to fulfill their own communication goals by respecting and affirming the multilevel cultural identities with whom they interact. (p. 219)

Marratech as an Optimal Tool for Digital Collaboration

The optimal technology tool to meet the research goals has been Marratech, a software available for free download from the Internet. One university pays an annual fee to host virtual rooms so that students and teachers and meet in real-time online for interactive and dynamic learning sessions. Recently, Marratech was acquired by Google and partnered with Elluminate, although it retains its functionality for the purposes of CCR connections. While the CCR team hopes that Google or Elluminate will soon release an even better version of the remarkable, multi-function software, the current version still offers the best technology tool for multi-modal e-Learning across platforms and countries.

During its research the CCR team found that the benefit of Marratech is that, like popular platforms such as Skype, Marratech supports sustained video chats, and like MSNChat, it can host multiple users simultaneously in the same virtual room – a key feature for small group work in a virtual space. Yet Marratech boasts other integrated communication technologies that make it far superior to other e-Learning alternatives. Firstly, it has a chat feature, allowing students to communicate in multiple modes (audio and textual) during their video conference. But even more important is its interactive whiteboard. This space can be used to present PowerPoint slides in real time (whether for the purposes of an instructor's lecture or student presentations), and it also provides a space for real-time collaboration, where students can compose texts together during their small group work. This tool allows for students to focus not simply on *textual analysis* but on *textual production*, where the most learning occurs. Students therefore engage in active learning, taking ownership of their work, and learning to negotiate cultural differences to arrive at a common goal. Thirdly, Marratech provides a recording option, so that the entire session can be captured and then played back in real time for either research or pedagogical purposes. For teachers unable to view each small group at once, this record feature allows them to revisit the site of e-Learning for informational or assessment purposes.

Thus, the Marratech interface allows for virtual encounters that a few years ago would not have been possible. In the interface the students can see and hear each other, they can write on a shared whiteboard, they can examine images and deliver Powerpoint presentations to each other. This synchronicity in turn fosters increased responsibility for participation and allows for dynamic interaction and collaboration. The virtual encounter in the Marratech interface invites all the members in the group to speak, write, and engage in the e-Learning environment. In this way, a Marratech-enabled pedagogy facilitates interactions such as collaborative authorship activities and knowledge construction between learners from distant, contrasting cultures through the use of modern communication technologies.

For teachers, the ease of moving from one virtual room to another within Marratech allows for great pedagogical freedom. A teacher can swiftly "switch" from virtual room to virtual room without turning "on" his or her video, thereby "checking in" on the various working groups or listen to a rich discussion without interrupting the students. CCR research has found that a best practice with Marratech is for a visiting teacher to type a message into the chat room and not turn on the video when moving group to group, or room to room. The teacher can assess whether the group is on track with the lesson plan or whether the work of the team, even if off-track, is producing excellent results towards the learning objectives of the session. As a platform, then, Marratech's features allow for innovative communication strategies even on the part of the teacher in the global e-Learning environment.

Video-Conference Protocol

For each video-conference connection, CCR helps design lesson plans that offer a clear structure and methodology in order to optimize learning, introduce new technologies incrementally, and foster both *digital literacy* and *cultural literacy*. The developed protocol of these lesson plans runs as follows:

- Connect to Marratech virtual auditorium ("CCR Lounge") via computers enabled with webcams and speakerphones or headsets; normally 2-3 students sit before one computer to connect as one group.
- With all groups connecting into the virtual auditorium, a brief (2 minute) introduction and welcome is given by faculty at participating universities
- Faculty provide a brief (3-4 minute) "model analysis" or preview of the group task to be completed during the connection; this video-instruction provides an e-Learning instance of distributed pedagogy, whereby the instructor serves diverse communities (the home institution and those connecting in to the video-conference); with Marratech, the instructor's voice and image are both

transmitted at the same time, while any PPT slides or other multimedia is simultaneously streamed live to all participants.

- Groups switch (allow 2 minutes): each student group leaves the main auditorium (CCR Lounge) and connects to their respective small groups through the virtual interface of Marratech. When a group connects with another, the composite group is called a "globally-distributed team."
- Complete "icebreaker" exercise for first time group connections (10 minutes): to alleviate the anxiety of this new interface and the awkwardness of the intercultural encounter, a pedagogically-low-stakes icebreaker engages all group members to speak, listen, write on the whiteboard, and become familiar with the technology as well as with new colleagues from across the world. Examples of icebreakers include: share a specific cultural practice from your university or country; ask two questions about the other university's website rhetoric; hold up to the webcam an object as a cultural artefact that represents your identity; draw a cartoon on the whiteboard together.
- Conduct main task, project-based learning (40-60 minutes): Using the video, audio, chat, whiteboard, and external links, students complete the pedagogical task at hand (the lessons range depending on the course themes and goals; see examples here **on the Workshop Page.** Students write up points of analysis or argumentation on the white board as a product to be delivered in closing presentations or transferred to the CCR blog. Often, they will cut and paste images from the Web or make a montage of visual texts, including political cartoons, ads, and websites as a means to produce a multimedia collaborative text that does not rely on English to communicate its argument. Thus, in most cases, the lesson plan will require all members to contribute to writing or to producing a multimedia learning product at the end of a session.
- Return to CCR Lounge virtual auditorium for presentations (10 minutes): students leave their globally distributed teams, "switch back" to the auditorium room where they join a virtual student conference; each group reports back to the others, uploading their collaborative product for presentation. Listeners post comments or questions in the chat box during and after presentations.
- After the video-conference connection, students post their work on the **CCR project blog,** and they participate in a debrief session at individual universities.
- At the end of all connections for a term, students complete an anonymous exit survey and are invited to participate in focus group or individual interviews in order to offer more feedback to the CCR research team.

Best Practices for Implementation of Communication Technologies

During the course of extensive collaborations with different partners in the Cross-Cultural Rhetoric Project, the research team has developed a series of best practices for communication technologies designed to promote the most productive encounters between students during a video- conference exchange. Accordingly, CCR suggests that institutions involved in active e-Learning collaboration implement the following three measures:

1. Distribute the students into groups with acoustic isolation or in dedicated learning spaces
2. Use echo-cancelling audio devices to minimize sound disruption.
3. Connect to the video conference from a wired, not wireless, Internet connection.

The first best practice for Marratech-enabled e-Learning involves putting students into small groups with acoustic isolation and, ideally, at dedicated learning spaces. Initially, the CCR project team hosted all student video conferences in a single classroom, so that five groups were working simultaneously with their international partners. Even with the addition of sound partitions, the students were deeply distracted by the surrounding groups to the detriment of their own engagement and productivity. In one case, the voices of one group bounced off the glass walls of a partition and across to another group at a volume greater than that of the colleagues speaking through the computer. Thus, while many universities may be relegated to using one single computer lab, the placement of all teams in one room is not ideal. If using one large room is the only option for connectivity, then each student must be equipped with a headset to provide acoustic isolation and create the effect of a designated learning space. Ideally, place each student group in a separate room – a small conference room, tutorial cubicle, teacher's office or even an open break-out space in a hall or lounge – and equip each group with a computer, web-camera, and speakerphone.

Aside from external noises made by other groups, echoes from the computer are one of the most common and most distracting problems experienced by students during video-conference connections. This is true even when a team is located in its own designated learning space away from other groups. Echoes occur most often in situations where a computer's built-in microphone picks up the speaker sound, re-transmitting it over the video conference connection; the result is that the person speaking hears his or her own voice transmitted back through the speakers of the connecting computer. This echo effect, depending on its intensity, can severely distract the speaker and, in the worst cases, completely impede the normal flow of conversation. Ironically, rarely does the person causing the echo actually hear the echo. For situations where adjustment of a computer's audio settings does not eliminate the echo, there are two common solutions: the use of a headset with microphone or the use of a special echo-cancelling speakerphone. While the first option quickly resolves the echo issue, in situations where students are working in groups, it inhibits the group dynamic by effectively isolating each student's audio experience. Thus, the echo-cancelling speakerphone is optimal for eliminating echo while still fostering a positive collaborative environment.

Finally, the third practice, connecting via a stable, wired internet connection, may seem counterintuitive in a technological climate where the portability of laptops, WiFi, and handheld devices has moved users systematically away from dependence upon wire-and-wall connections. However, wireless connections are consistently less stable than wired ones for carrying the large broadband signals of audio and video feeds necessitated for good-quality video conferences. Choppy video, garbled audio, even dropped connections—these problems tend to arise most prominently during video conferences on wireless devices, clearly producing a situation not conducive to effective small group work. This does not mean prohibiting laptop computers from use in video connections; however, laptops should be wired to a stable Internet connection and the wireless option disabled.

Each of these measures will help create an environment in which students can experience a dedication of focus to the task at hand, a simulated proximity to their partners in the video exchange, and a transparency of medium, all essential factors for productive digitally-mediated cross-cultural collaboration (O'Brien, Alfano, Magnusson, 2007).

Best Practices for Student Learning in Globally-Distributed Teams

When implementing the technologies discussed above, through the carefully developed protocol or lesson plan, the research team discovered several best practices for small group pedagogy that might be of value to teachers and researchers working in this area.

First, the project team learned that students learned more from small group collaboration—when working on rhetorical analysis tasks with members of diverse countries—than from large group discussions or extensive faculty lectures about cross-cultural texts. Lesson plans for video-conference connections took on a new design to reduce faculty involvement and allow increased time for collaborative work by students in "globally distributed teams." Second, the team learned that students appreciated working through different kinds of rhetorical analysis activities such as analyzing an ad, a website, a musical group's image, or a speech. The purpose of the project was to allow students to wrestle with diverse interpretations of cultural texts in order to foster intercultural competencies, or the increasingly important skill of approaching others with consideration for and sensitivity towards diverse cultural contexts. Along these lines, the team learned that such analysis activities should culminate with students bringing in their own texts for analysis as a team. Third, the session needed to end with a product: a collaborative text, produced by all members of the globally-distributed team working together. This could be a written analysis of a visual text or a multimedia montage crafted on the whiteboard. The skills of negotiation, collaboration, and communication came into play when the students were asked to move from analysis to production. In these ways, the CCR methodology evolved to facilitate optimal global learning based on small-group collaboration.

Results: Quantitative and Qualitative Data

In three years of research, the CCR project found that e-Learning through multiple modalities expands the sensitivity of students as they encounter other voices and experiences, and it improves their ability to listen to and learn from each other. Analysis of quantitative and qualitative data collected during evaluation (comprised of exit surveys, focus groups, interviews, observer logs, reflection letters, and video footage) shows that cross-cultural collaboration made possible by effective use of communication technologies does give students the tools and skills they need to become effective and capable global citizens.

In aggregate data combining the first two years of project implementation, 94% of students somewhat to strongly agree that they learned intercultural competencies through the measure "developing sensitivity to and consideration for others from diverse cultural contexts," the precise definition of "intercultural competencies" provided by theorists Lovitt and Goswami (1999). This question achieved a mean of 5.4 out of a 6.0 Likert Scale (see Fig. 1). Moreover, 96% of students somewhat to strongly agree with the project's second core measure for intercultural competencies concerning "situated knowledge," namely, "developing a better understanding of how people from different cultural contexts perceive, analyze, and produce knowledge in the form of visual, written, or spoken texts." This question achieved a combined mean of 5.04 in the aggregate data.

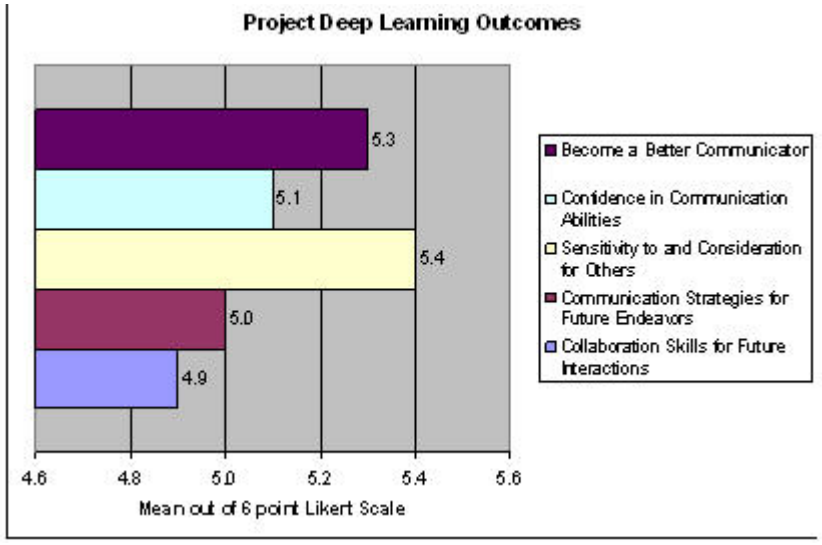

Figure 1: "Intercultural Competencies" Project Outcome Analysis

Qualitative data provides a human face for these statistical results. An exit letter from one student demonstrates the way in which the CCR project made possible student competencies in communication, or a move from awareness to understanding:

> Before, I was unable to mix with people coming from another country and to discuss and share different points of view with them. Indeed, before, being a person coming from France, I was a little narrow-minded and I realised thanks to this class that the others could teach me a lot. Moreover I totally changed my opinion towards the American[s] who I thought were unpleasant persons because of their mind[set] and their way of thinking! In fact, they are very tolerant, open-minded and we had very interesting dialogues during the video conversations!" (name removed, personal communication, January 5, 2008)

In rating technologies uses to facilitate intercultural competencies, data indicated that students learned most when working within a globally-distributed team across both countries mediated by video-conference connections (mean = 5.1). The CCR team's strategic use of *dedicated learning spaces,* made possible by acquisition and implementation of new technologies in the form of collaboration stations, enabled students to form strong interpersonal relationships that facilitated successful group-based learning and collaborative production of new media texts. Qualitative data again confirmed the success of this particular set-up of collaboration stations in dedicated learning spaces. As one exit survey response reveals: "I learned that by doing group work assignments, our ideas can really form within the cross-cultural context. We can really learn a great amount by sharing these ideas found within these small exchanges."

Discussion: Value of Video-Conferences as e-Learning Pedagogy

For students, most of whom are likely to enter fields that increasingly demand training in global networking, cross-cultural understanding, and effective teamwork, participation in the project offers an opportunity for unprecedented hands-on learning of both digital communication tools and cultural codes and practices across the world. The exit narrative of one Swedish student affirms this outcome: "The idea

to have a cross cultural rhetoric education between [Sweden] and [the U.S.A.] is something unique… a first step towards a global university and a new kind of education." The student emphasized that he developed knowledge about "how to be understood" as well as "how to understand others." His words show achievement of project goals: developing intercultural competencies as mediated by effective technology practices in university education.

For faculty involved with the project, new uses of communication technologies for e-Learning provide an opportunity to share a rich camaraderie by meeting each other's students, giving model analysis lectures, and commenting on group projects all in the virtual space of the Marratech video-conference. At the same time, Marratech e-Learning makes possible the accomplishment of global learning that is immediate and transferrable.

Conclusions: Significance for Global Citizenship

Current work in educational theory, intercultural communication, and digital pedagogy all point to the need for new empirically tested practices and scholarly sound methods for developing solutions for how best to use communication technologies to offer students hands-on learning of intercultural differences. The Cross-Cultural Rhetoric Project has sought to meet that need by offering a model of global learning using digital technologies to develop innovative classroom practices. Another way to look at it is through the lens of theorists Chen and Starosta (2008) who assert that "The development of new ways of living in the world together is pivotal to further human progress; we must learn how to see things through the eyes of others and add their knowledge to our personal repertories" (p. 215). Marratech-enabled global e-Learning, by teaching students to see through the eyes of others, provides a way for students to learn negotiation and communication strategies that will serve them and others for years to come.

The Cross-Cultural Rhetoric project, as a case study in digital pedagogy, offers a method for team-based learning through video, audio, and collaborative composition that can foster intercultural competencies for the ever-changing site of global contact. In a Marratech-based methodology of e-Learning, participants learn concrete skills and modes of communicating that translate into core competencies which are, in theorist R. Brislin's words, "practical when individuals or group members are about to go to many different countries" (p. 264). Yet such learning is equally valuable when students at universities in America, Sweden, and Egypt cannot or do not travel abroad but instead connect through the virtual channels of the multimedia classroom.

Acknowledgements

Thanks especially to Professor Anders Eriksson and Eva Magnusson of Örebro University for their camaraderie and hard work in the early years of the CCR Project. Thanks to the Wallenberg Global Learning Network for funding the research, to Professor Andrea A. Lunsford for supporting it, and to Robert E. Smith of Wallenberg Hall for his unmatched enthusiasm and technological expertise. Finally, thanks to our newest CCR partners in Cairo, Khabarovsk, Singapore, Sydney, and Uppsala for taking the project to new levels of global e-Learning.

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Manuscript received 15 Aug 2009.