Adding an International Dimension to our Teaching:
An Application of Computer Mediated Communication Technology

GUILLERMO VASQUEZ DE VELASCO
Texas A&M University

The paper makes reference to the current process of globalization and the resulting need of adding an international and multicultural dimension to our undergraduate programs. In particular the paper makes reference to the potential offered by Mexico and Latin America as a target in our process of professional globalization and market expansion. With this challenge in mind the paper starts by making a critical review of some conventional approaches for offering learning opportunities immersed in a foreign context. Such review is then used as a point of departure for the exploration of emerging technologies that may support new approaches for offering similar learning opportunities. Within this conceptual framework, the paper describes current research and development work on the use of Computer Mediated Communication (CMC) technology for adding a Mexican dimension to one of our undergraduate design studios. After making a brief reference to the initial implementation of such design studio in the fall of 1996, the paper describes in further detail its subsequent implementations during 1997. The paper ends by presenting a set of intermediate findings on the way in which the use of a CMC-based approach is likely to interact with our already well established Study Abroad Programs and Student Exchange Programs.

INTRODUCTION

In accordance with the current process of globalization and promotion of cultural diversity, architectural programs need to implement an international and multicultural dimension in their curricula. Within such a challenge, the teaching and the learning of humanities plays a fundamental role that is not limited to the historical and theoretical understanding of an international design context but extends itself to our actual ability to perform as designers in a culturally diverse environment. In particular, with the establishment of the North American Free Trade Agreement (NAFTA), our opportunities for interventions in the Mexican and Latin American markets have been substantially upgraded, but our ability for doing so in a culturally sensitive framework remains largely inadequate.

For instance, in reference to our communication skills in a culturally diverse environment and the acquisition of a second language, most of our students have been exposed to the use of Spanish at a fundamental level. Some may have even achieved basic conversational skills, but beyond that, very few can present or discuss an architectural project in a second language. If we look forward to accessing a foreign market it is essential to address language barriers and work on ways to offer relevant learning opportunities.

In similar way and only one step beyond bridging over the linguistic barrier, the quality and strength of inter-personal relations largely depends on our ability to understand and deal with aforeign cultural context. Our students have very limited knowledge of the cultural framework in which other societies work. Furthermore, based on our exposure to unreliable sources of information that tend to stereotype foreign cultures, for the sake of easy entertainment, we tend to develop pre-conceived frameworks that distort our understanding of reality. Our students need to learn about the cultural, social, and political contexts in which our potential foreign markets are immersed. This has an impact not only on our ability to develop strong inter-personal relations with business associates but also permits an accurate architectural response within such contextual settings.

In the process of adding an international dimension to our undergraduate programs we have invested substantial resources in Study Abroad Programs and International Exchange Programs specially designed for offering learning opportunities immersed in an international setting. Within such context, this paper reports on our experience with Study Abroad Programs and International Exchange Programs as a point of departure for the presentation of how we are exploring the use of Computer Mediated Communication (CMC) Technology for establishing a low-cost & high-impact dynamic that looks forward to promote international mobility and add an international and multicultural dimension to most of our undergraduate courses.

INTERNATIONAL MOBILITY PROGRAMS

Since 1978 our school has been active in the development of Study Abroad Programs, and as in the case of many other schools of architecture our early decision to offer an interna-

tional learning environment was not necessarily motivated by the concept of a potential global practice or the need of expanding our design market beyond our national borders. Our first Study Abroad Programs were largely motivated by our understanding of how visiting different countries stimulated our ability to perform inductive and deductive inferences during our design engagements (Angulo, 1995).[1]

Traditionaly our Study Abroad Programs had the character of fast-moving field trips in which students were able to consume large amounts of imagery but had little opportunity to experience a cultural context that could be used as frame of reference in their observations. These Study Abroad Programs, due to the large amount of travelling they usually implied, used to be particularly expensive.

Currently and through special arrangements that permit lower travelling and lodging costs, during some of our summer sessions we continue to offer Study Abroad Programs. In particular, every summer a group of our students travels to the South of France together with one or two instructors for undertaking historical survey work in gothic monuments. Another quite successful Study Abroad Program of our school takes a large number of students in a tour of Greek and Turkish architecture. We are currently developing a similar program for Mexico City that will address Mexican culture on an integral framework.

Understanding that our students need more time in a single foreign context in order to achieve certain level of cultural immersion, and that not only courses on architectural history could benefit from such a foreign setting, our college decided to establish an outpost in Italy in order to house large groups of students and their instructors for semester-long Study Abroad Programs. Our school of architecture makes use of this facility every fall semester by sending an average of 50 students that follow courses on a number of different subjects.

Our Study Abroad Program in Italy has been very successful on adding an international dimension to a larger number of our regular courses and on making possible for our students to experience a foreign context at a more reasonable cost. Nevertheless, the level of cultural immersion that is achieved is somehow restricted. While in Italy, our students live together, continue to exercise an American life style, and follow all their courses in English. From time to time they will venture in short periods of relative immersion while travelling around Europe but even in such cases they tend to do so in groups that continue to isolate them from true cultural immersion.

In search of a higher level of cultural immersion in the international learning opportunities that we offer to our students, our Study Abroad Programs have been complemented by Reciprocal Student Exchange Programs. In a reciprocal student exchange program our students will typically pay their tuition fees in our university and attend classes at a foreign institution with which we have a Memorandum of Agreement. Based on such bilateral agreements, the course syllabi are coordinated, and the grades obtained by our students at the foreign institution are transferable to courses of their original degree plans. During the exchange our students follow courses in a second language and are usually hosted by the family of a fellow student with whom they live following a local life style. When we receive foreign students within such reciprocal agreements, the students are registered in our regular courses and are housed in our campus dormitories where they can easily pick-up an American campus life style.

Within such a framework, in 1996 we initiated a Reciprocal Student Exchange Program with Mexico. From our current experience in this framework we are learning about the richness of true cultural immersion but also about the limitations that our students have for participating in such dynamic. Under present conditions we can not maintain reciprocity with the exchange potential offered by Mexico. In Mexico the question of recruitment for our exchange program is a matter of selection since a large number of students has the language qualifications needed for studies in our school, on the other hand, for us the question of recruitment is a matter of aggressive advertisement and considerable amount of counselling. Our students have two distinctive limitations that need to be overcome if we wish to make our exchange program a successful one:

First, our students need to improve their knowledge of Spanish. For achieving true cultural immersion during the exchange program our students should be able to follow classes in Spanish and participate in the normal academic and extra-academic activities of a student of architecture in Mexico City. Second, our students need to overcome their fear to the unknown and in particular their apprehension to the stereotype of the Mexican urban environment that years of negative reporting have created on them.

In accordance with our observations the exchange program itself helps to overcome these two limitations as the incoming Mexican students offer valuable opportunities for practising Spanish in academic and extra-academic situations, and as they explain that Mexico City is an exciting and active environment that is not necessarily more or less dangerous than most of our large cities. The problem is that since we can not send more students to Mexico, we can not receive more Mexican students, and the impact of the few that we can receive is lost in the magnitude of the need.

Maintaining the positive attributes of our Summer Programs, semester-long Study Abroad Programs, and Reciprocal Student Exchange Programs, we need to explore additional alternatives that, making use of computer mediated communication technology, may support all our international mobility programs and open new channels for implementing an international dimension in our undergraduate program.

INTERNATIONAL COMPUTER MEDIATED COMMUNICATIONS

Since 1993 a number of architectural schools in the United States, Europe, and Asia have experimented with the use of distance communication media for conducting virtual design

studios that centred their attention on the use of the Internet for conducting collaborative design activities at an international level (Bradford, et al, 1994)[2] (Cabellos, et al, 1994).[3] In 1994 our school was involved in a similar effort (Van Grootel, 1994)' but as in many other cases we found that the level of transparency offered by the communication interface was quite limiting. In certain instances a satellite up-link was used for establishing an interactive videoconferencing dynamic, that demonstrated outstanding attributes, but the high cost involved in such satellite videoconferences made them impractical on a constant and sustainable basis.

Having in mind the potential offered by videoconferencing technology, on 1996 when the Interactive Videoconferencing Network of our university expanded its lines beyond the border with Mexico, and established a videoconferencing site in Mexico City, we immediately saw the opportunity for undertaking previous experimentation on virtual design studios and complement our instrumental base with a strong emphasis on the use of compressed video technology. As previously reported (Vásquez de Velasco, 1996).[5], during the fall semester of 1996 we conducted an experimental design studio with a group of students at our main campus and a group of students in Mexico City. This design studio became known as The Tex-Mex Virtual Design Studio.

From our first experience on the use of compressed videoconferencing we were able to assess a positive impact on the performance of our students. In particular some of our previous papers on this subject (Vásquez de Velasco & Jiménez, 1997a, 1997b, 1997c)[6,7,8] make reference to upgraded levels of dedication, but it was not until the spring semester of 1997 that an interesting pattern started to emerge. In reference to such patterns, we found that a number of former students of the virtual design studio were interested on participating in our student exchange program with Mexico, others were motivated to study Spanish, and quite a few were actively pursuing employment with design offices that had branch offices in Mexico.

Since these patterns were detected early in the spring of 1997 we were able to develop a hypothesis for immediate testing during that semester. Our working hypothesis was: "Virtual contact with a foreign culture in a domain-specific context can motivate students to pursue opportunities for real contact in a similar context."

In accordance with an early survey of the group, made out of 9 American students, 2 Mexican exchange students and 1 Russian exchange student, only one American student had previous knowledge of Spanish as a second language and was potentially interested on participating in our student exchange program with Mexico. No other American student had actual plans of undertaking studies of a second language. The Russian exchange student was interested on studying French as a third language.

In contrast to the previous group of students that participated in the virtual design studio during the fall of 1996, this group was not set-up to interact with another group of students in Mexico but with a team of design instructors acting as clients. Our students were asked to design a business hotel and convention center in Mexico City. The project briefing was transmitted from Mexico and posted in the WWW site of the course. The students were asked to address their questions directly to the clients in Mexico through the use of e-mail and display their designs in the WWW site of the course for the clients in Mexico to review and comment. Four times during the semester the group of students in the United States and the team of design instructors in Mexico met for real-time interaction in videoconferences that lasted about 4 hours each.

Fig. 1. Image of the students and instructors (in the television screen and wall projection) of the Tex-Mex Virtual Design Studio during the Spring of 1997.

The instrumental layout used during our videoconferences was based on a T1 digital network connection between a videoconferencing hall in our campus and a virtual classroom in our university's office in Mexico City. The virtual classroom in Mexico City counted with the standard equipment of two television screens for local and remote images, one remote-controlled video camera mounted on top of one of the screens, and one document camera. The videoconferencing hall at our main campus in the United States was equipped with 4 television screens for remote and local images, a video projector for display of the Mexican site on actual 1-on-1 scale, two video cameras for the hall, one document camera, a computer connected to the Internet for direct display of WWW material into the bandcasting system, and a Smart Whiteboard.

Also in contrast to our previous implementation of the virtual design studio, during the spring semester of 1997 our technical difficulties were minimum. The system performed as expected at all times and few small difficulties on the audio system in Mexico were quickly overcome. The only actual limitation we had was on the use of the Smart Whiteboard that did not work correctly. We were planning to use the Smart Whiteboard, which permits direct interaction with digital material on a touch-responsive whiteboard, for the display of body language on front of a large image of our WWW site and our design documents. The level of transparency achieved by the use of the I-on-1 projection of the Mexico site gave outstanding results.

Interaction between both sites was initially established on the basis of a design briefing and introduction of all the members of the studio. Since the site selected for the new

building contained a small facade of the Porfirian period, that was to be integrated into the new project, the Mexican instructors had to address a number of contextual elements that the students found in particular interesting.

The following videoconferences, that served as formal design reviews, had a dynamic typical of a pin-up review in which the students presented their projects and the reviewers in Mexico addressed a contextual crit. In some cases very interesting debates were established and extensive use of on-the-spot sketching was displayed. The possibility of using a WWW display and a sketching path on the document camera gave the students the possibility of blending dynamics that are typical of desk crits with those of formal pin-up reviews.

The quality of the documentation that the students were able todisplay in the WWW site of the studio was overwhelmingly superior to that of the previous semester. In some cases the students were able to display gif-animations of their projects. The quality of the material in display motivated the participation of not only their Mexican instructors but other American instructors and students of architecture on a nationwide basis

On a survey made at the end of the semester, the one American student that had Spanish as a second language decided not to participate on our student exchange program with Mexico. The student mentioned that the Virtual Design Studio had given him a good understanding of the Mexican design environment and an opportunity to test his Spanish in a professional context. Based on such experience he was planning to apply for a job with some well-known US design firms that already have branch offices in Mexico City.

From the remaining 8 American students, by the end of the semester 4 of them, all male, had formal plans for enrolment on Spanish classes. All 4 students agreed on mentioning that the Virtual Design Studio had given them a new perspective of their potential design market and that they were convinced that acquiring a second language was essential. Further more, all 4 students were interested on the possibility of participating in a Student Exchange Program once their knowledge of Spanish would improve. The remaining 4 students, 1 male and 3 female, had no intentions of pursuing asecond language or participating in a Student Exchange Program. From those 4 remaining students 3 had previously participated in our Study Abroad Program in Italy.

Due to the high profile of the Virtual Design Studio, other students of the department of architecture became interested on participating in future implementations of the studio and/or our student exchange program with Mexico. In particular few students with basic knowledge of Spanish were interviewed and one was selected for actual participation on the exchange during the fall of 1997.

At the time of editing this paper a new implementation of the Tex-Mex Virtual Design Studio has been completed. During the fall semester of 1997 we have addressed a dynamic similar to the one implemented during the fall of 1996 with two groups of students working in the US and Mexico.

CONCLUSIONS

It is yet too early to state a set of conclusions that may dictate the way in which we should use computer mediated communication technology for adding an international dimension to our undergraduate programs. The conclusions we hereby follow to render are to be considered as intermediate findings in a field of study that continues to be explored.

First, we have found no indication that virtual contact with a foreign culture may discourage the undertaking of real contact. The one student that was potentially interested on participating in our Student Exchange Program with Mexico, and later decided not to participate, made use of the virtual contact for testing his Spanish speaking skills and arrived to the conclusion that they were good enough for entry level in a transnational design firm. His proximity to graduation was an importantfactor in his decision-making. My analysis of his case leads me to consider that virtual contact is not likely to discourage or replace real contact but offers an alternative for exploratory processes that may lead to well-informed decisions. In this case I believe that the student made the right decision and I look forward to learn about his future professional development.

Second, there is substantial evidence that leads us to believe that virtual contact helps to promote real contact. The 4 students that by the end of the semester were making formal arrangements for studying Spanish were strongly motivated by the possibility of future participation in our Student Exchange Program with Mexico. Once more. in such cases we can see that the virtual experience was used for exploratory processes that resulted on well informed decisions. The students of reference were able to gain a new perspective about potential foreign markets, were able to overcome unsubstantiated prejudices about the Mexican context, and were able to assess that before they could participate in the exchange their Spanish had to be improved.

Third, an implicit relation between the Tex-Mex Virtual Design Studio and our student exchange program with Mexico adds a techno-glossiness to the exchange program. Such techno- glossiness appears to be very attractive to our students and motivates their interest on participating in the exchange. Currently. most of our applicants to the student exchange program with Mexico bring a reference to the The-Mex Virtual Design Studio.

Fourth, based on the fact that all the students with previous international experience in our Study Abroad Program in Italy were not interested on learning a second language or participating in the exchange may point to some level of conflict between Study Abroad Programs and Student Exchange Programs. This is an area of research that requires further exploration.

Our main conclusion at this time is that virtual contact with a foreign culture can be a powerful resource for promoting an international dimension in our undergraduate program. The virtual experience is by no means replacing the need for actual physical mobility and cultural immersion but on the contrary,

evidence suggests that virtual contact offers an exploratory environment in which students can make well-informed decisions about undertaking more immersive activities.

Based on such conclusion we are currently exploring the possibility of developing a series of "International Computer Mediated Debates" with the participation of students from different countries. Such debates will make use of Internet resources and compressed video networks for addressing controversial issues. The debates will be open to all our students in order to offer a wide base for exploration and the active involvement of our students in the identification and development of our future Study Abroad Programs and Student Exchange Programs.

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