

# WINNING ON THE NET

## VIRTUAL INTERNATIONAL DESIGN EDUCATION

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### Introduction

The authors of this paper are currently developing a program for the utilization of the Worldwide Web as the stage for international design education. The project draws from the success of an "in-house" electronic studio conducted by Professor Mackey in the Spring of 1996. The immediate objective of this project is to expand the activities of the existing cooperative international design education program between Ball State University and the Technical University of Berlin into the area of virtual international education. Based on the experience of this pilot project, we expect to expand this model of virtual international design education, with necessary modifications, into other cooperative international design and planning education programs, as well as to build new ones.

In this paper, we shall first share our experience in the area of virtual education. We will then discuss the proposed pilot project between Ball State and the Technical University and its principal objectives. We shall conclude our discussion with a brief sketch of our future plans.

### Virtual International Education

The educational system in which the instructor and the student do not occupy the same physical space but use technology to communicate with each other is commonly known as distance education.<sup>1</sup> Distance education is not a new phenomenon; it has been a mode of teaching and learning for at least one hundred years (Moore & Kearsley, 1996). Educators have been using print technology, broadcasting, telecasting, and, to a lesser degree, videoconferencing and Internet education to this effect.<sup>2</sup>

Distance education has primarily been a strategy to reach a larger audience, and has been a supplement to the regular classroom education. With the transformation of the potential student body and the needs of educational establishments, however, distance education has also evolved, responding both to the needs and the desires of the new students, and to social transformations. In so doing, the educational establishments have been redefining and reestablishing the place of education in society, and the role of educational institutions. Networked computers have begun to play an important role in this

area; the use of networked computing for higher education has also been with us for about two decades.

Our focus is precisely on the use of networked computers to enhance and intensify the teaching and learning process. We concentrate on providing a depth to design and planning education and not so much on its expansion to larger numbers of students. Hence, the model we propose is not for the periphery of the main educational system and supplemental to the regular classroom, but expected to operate as a central mode of design education. Instead of extending the extant educational network to serve new groups of clients, which can and might also take place concurrently, our aim is to unite groups engaged in similar learning processes in different locations by building a cyber (virtual) connection that bridges the geographical gap between them.

Using large scale computer networks such as the Web for education has the danger of fragmenting the peer groups. The ability to get connected to the receiving end of the one-way teaching process known as the dissemination of objective knowledge from "anywhere" eradicates the need for students to relate to each other and function as a peer group. Peer education is also an integral and crucial part of the learning process. We propose to build a multiple-way link uniting the peer group and with the instructor. This model is, therefore, fundamentally different from what is traditionally known as distance education as well as the uni-directional computerization of teaching and delivery methods which is taking place at a large number of educational institutions in the United States.

Our project focuses on bringing the potential of the information age to our students, to educational institutions, and to the teaching and learning process. It reinforces the sharing of information, interactive communication, and building relationships among student peers. This will undoubtedly warrant changes in some stagnant and rigid areas of the extant education providing organizations. We believe that academic institutions, which will have to adapt to both the new society and space in the information age, can use this methodology as a model in an effective and conscious way to engage in this process. We still consider this to be an experiment, and we are therefore cautious about the model we propose.

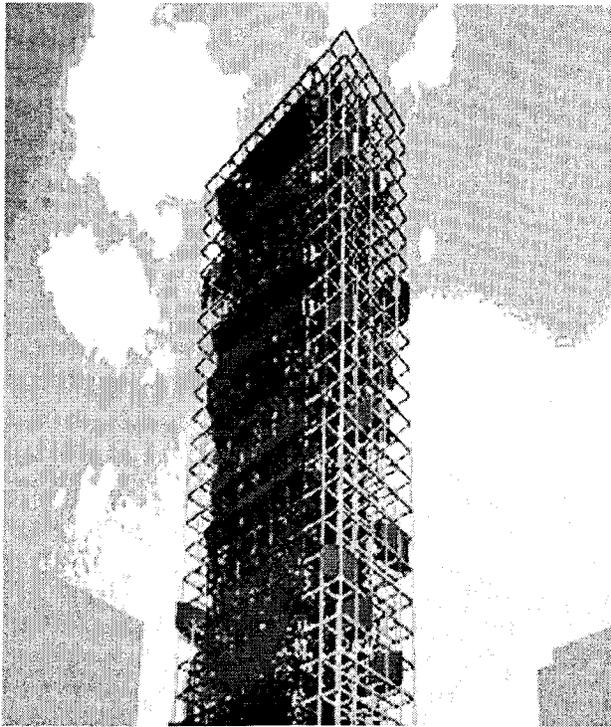


Fig. 1. *Hotel of the Future Competition*. Image by Emily Fisher.

## The Experiment

Ball State University is resourceful in the area of computer technology, and the faculty of the College of Architecture and Planning has carried out many experiments to expand the use of the computer as a tool for design and planning education. There are a few classes that use electronic bulletin boards and discussion forums which allow peer interaction outside the class room and goes beyond the fragmented exchange of individual e-mail messages. Expanding the possibilities, Mackey's electronic studio was connected to the Internet during the spring term of 1996. This allowed not only the transfer of text but also of images, very significant to environmental design and planning education.

This studio consisted of sixteen older Pentium 90 workstations; a single computer was typically assigned to a single student for their exclusive use during the term. The software systems installed at each student workstation includes #D terrain and architectural modeling, a simple Hypertext Markup Language (HTML) editor (*HotDogPro* from Sausage Software) for creating Web pages, and a web browser with electronic mail.

The initial student assignment was to get outside critics involved in their design processes and to obtain thorough and pragmatic feedback of their work. The students were first required to identify potential design critics, architects, architectural firms, interior designers, and real estate developers, using the Web. There were no restrictions in regard to their geographic location, but the work of the critic, as illustrated on the Worldwide Web, was to be appealing to the particular student and the prospective critic should have indicated an interest in

issues concerning the course and the particular design problem.

The second step was to contact, via e-mail the potential design critics, exchange some ideas, and obtain their agreement to act as a design advisor during the academic term. Students enjoyed this as they were able to connect with the profession, able to receive advice from a real world practitioner, and to build bridges to potential employers.

In the third step, each student constructed a web page for the posting of their in-progress design work. They were required to update this page on a weekly basis, illustrating the latest stage of the work as the design solution developed. Students enjoyed constructing web pages but they also learned the importance of maintaining and updating them.

Finally, the students were expected to receive feedback from their worldwide design consultants. They used E-mail for this purpose. With compatible software packages, students could obtain both written and visual feedback.

Although the technical aspects of the process were simple and the costs were minimal, the information received had extremely high value and the experience it provided was rich. Instead of the regular studio with a single instructor and multiple students, the setting became a broad and diverse environment that went beyond the four walls of the room. There were many instructors and advisers in a variety of places, geographically as well as technically, such as sites, factories, and design offices.

This experiment, in effect, empowered the students. It resulted in differing evaluations and students learning to choose from a range of viable alternative suggestions and philosophies. This allowed the studio to escape the apprenticeship learning model driven by the need to regard the instructor as the model to emulate, as well as the dissemination model which considers the instructor as the source of "true" knowledge which she/he disseminates. This studio emphasized the process of learning and made the act of teaching supportive and not one of control. Instead of being instructor-centered, this studio was student-centered; it transformed the instructor into the facilitator and coach and less the sole expert and mentor.

The instructor was challenged to be more knowledgeable, be able to think through the material that the students found for themselves, and demanded more productive time. Yet this model provided the instructor with great experience and an opportunity for professional development, including keeping up with the latest developments in the academic and professional fields of design. The design vehicle for the pilot studio was the ACSA international competition, "The Hotel of the Future." This project itself had a international flavor and stimulated the students desire to obtain feedback from international practitioners and scholars. The objectives of the studio were, therefore, well supported by the design project.

The result of this pilot was the awarding of two prizes to this pilot studio out of a field of nearly 600 competition submissions received worldwide and only six total awards. In effect, due to the team submissions, almost half the entire studio participants were recognized

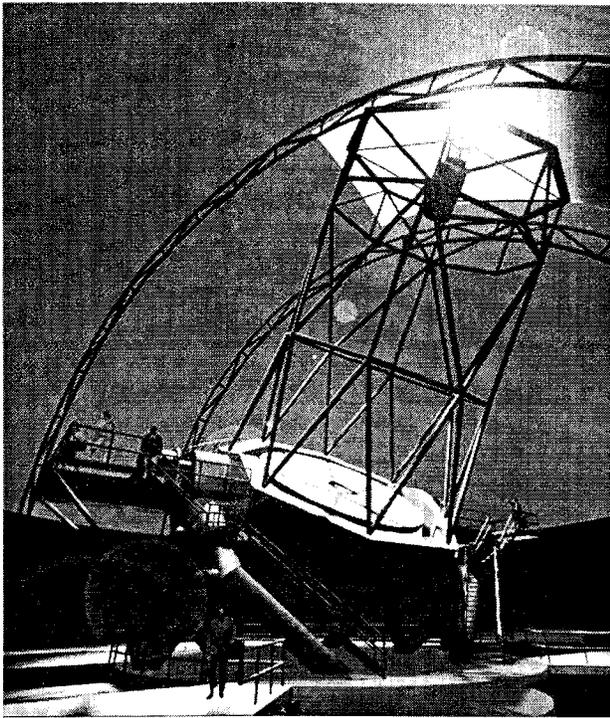


Fig. 2. *Hotel of the Future Competition*. Image by Jay Bieszke.

in an international competition. This success can in no small measure be attributed to the diversity and value of the feedback received from the international design community through the Internet.

The images below illustrate the winning competition entries (Figure 1, Emily Fisher; Figure 2, Gregg Miller, Nate Miller, Jay Bieszke, Chris Yates, Kevin Russell).

### The German-American Pilot Project

This studio has since served as a catalyst for an expanded effort to formalize the use of the Internet as a collaborative design medium and broaden student access to international studies and cultural interaction on a global scale. Ball State has more than its fair share of international programs, yet only a small fraction of the student population participates in these programs. Current programs, which rely on student and faculty travel, generally have relatively limited enrollments due to the cost of travel and lodging overseas. Despite their success as individual programs, short travel times have imposed limitations on the quality of cultural exposure and interactions the participant could receive. It is with the intention of expanding and enhancing international cultural interactions in the area of design and planning education that we have opted to organize a pilot project to establish cooperative learning and teaming between Ball State University at Muncie, Indiana, and the Technical University Berlin.

Cross cultural exposure is an effective means of not only learning about another culture, but also, in relation to various aspects of this culture, of understanding more closely about the participants themselves, their own

culture, value systems, and the aims and processes of design and planning in their own society. Long periods of international travel are undoubtedly the tool par excellence for such cross cultural experience.

However, short term travel, limited to a week or several weeks, can provide only a very limited interactive cultural experience. Getting past the most unsettled phase of travel, jet lag, orientation, and the initial settling-in, and reaching the most effective period of cross cultural exposure requires more time than what most short travel programs can afford to provide. This is where the Internet can be most useful.

The Internet can play an important role in deepening the travel experience and expanding the contact time. It can enable the interacting groups to maintain a longer contact time, beginning before the physical contact and continuing beyond it. Hence, the Internet can both expand the sphere of international experience to a larger group than that could afford to travel abroad and further enrich the experience of those who can travel. In combining physical and cyber contacts, we intend to focus on the Internet as the principal means of interaction, which could be supplemented with international travel when possible.

Along these lines, the pilot project would revolve around a cooperative international studio between Muncie and Berlin in the fall of 1997. This studio will have two groups of students; a group of predominantly German students in Berlin and another, predominantly American, in Muncie. It is important to note that there is a ten-year old student and scholar exchange program between Ball State University and the Technical University Berlin, and there are German students at Ball State and American students at the Technical University. This context could certainly enhance the cross cultural experience of the studio participants, providing a great cross-cultural learning situation.

The two groups of students will be located in Muncie and Berlin, about 5,500 miles apart. The studio will also have two instructors, one German and the other American. The Web would be the communication interface that brings these two groups together. We plan to construct a Web page that is accessible from both ends. This international collaboration would require the students to upgrade the pages frequently in order to keep each party well informed of the developments in real time. These interactions will also be supplemented by e-mail.

We also intend to obtain the services of outside design critics who can also use the Web to observe the design development and provide their input. In essence, this site constructed in cyber space would be the common meeting ground for a number of participants from several countries. The Internet also becomes the medium through which to mediate international time differences. Unlike the television broadcast systems, which require all critics and discussants to be present at the same time, the Internet allows each juror to comment at a time convenient for him/her, with the only constraint being a time frame. This would otherwise require a sizable amount of time, money, and effort to bring in well qualified critics.

The longer duration of the studio would provide sufficient time for the participants to get adapted to this

new environment. The project will be developed over a full semester. It is safe to anticipate that this time frame is sufficient for the students to get to know their international partners, design critics, their work habits, and become comfortable working in this environment. Then they will be able to deal with, and later take advantage of geographical and cultural differences.

A visit is not planned at this stage but could be combined. Those who travel should have sufficient background knowledge to gain an enriched experience and exposure. Those students unable to travel could also participate vicariously in their classmates experience by using the Internet as the contact medium.

In effect what this project creates is a single classroom in cyber space. This would bring two groups of students from two different countries, a number of design critics and advisers from a number of other international geographical locations, and knowledge from more places. For the German-American collaboration, this would be a laboratory that would build an ongoing relationship between the studio(s), travel, and exchanges through an interactive Web site.

### Conclusion and The Next Step

The question raised in the paper is how we use this model "to teach to win." The debates in political, professional, and academic circles about dictating the change as well as getting on the bandwagon very clearly indicate that our society is undergoing a radical transformation. The educational institutions in which we teach and our students learn, the future professional practices of our students, their clientele, and the required knowledge base are all subject to transformation. Quite naturally, there is a strong tendency to focus on the symptoms of this change and respond to these. The exclusive focus on technological developments particularly in the area of computers, mostly generated by the fascination and the fear rather than a clear understanding of the phenomena, is the closest to our professions.

The model of virtual international education that we propose is not technologically driven; the focus is on the new demands created by the transformations that our professions and schools are undergoing and new possibilities offered by the technological advancements

offer for the development of design education to operate within this new environment. This is not distance education and the learning process is not focused upon an instructor who is the disseminator of knowledge. Instead the instructor is a guide and coach who helps the participants engage their own learning. Moreover we do not propose this as a peripheral mode to the mainstream education, but as the central mode of teaching and learning.

What we propose is extremely low-tech and inexpensive for a college to undertake. The software required is available at very low cost or free, thereby making implementation of a similar program at other institutions very practical. For example, teaching the students to use the HTML software requires only one afternoon. There are many user friendly HTML editors available at a very low cost; some are freeware. Web software available today also makes instant up dates to a Web site possible. If we know what we want, the technology is readily available. Our goal is to develop a model for international studies and educational cooperation on a global scale.

The College of Architecture at Ball State University is full of study abroad programs, and there are also many foreign students. This virtual international education model is capable of radically improving and expanding the international and cross-cultural experiences of all students. The next step includes refining this model into a form that can be adopted by other universities around the globe.

### NOTES

<sup>1</sup> According to Desmond Keegan (1990), the principal characteristics of distance education are as follows:

1. The geographic separation of the learner and the instructor.
2. The "influence" of an educational organization.
3. The use of technology for communication.
4. The "provision" for bi-directional communication.
5. The absence or "quasi permanent absence" of a peer group.

<sup>2</sup> With the advent of broadcasting, the federal government of the USA issued the first educational radio license to the Latter Day Saints' University of Salt Lake City, in 1921. (Saettler, 1990).