

Intercontinental Seating

A Virtual Design Studio on three continents with four universities and one manufacturer

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Abstract. *In spring 2005, four universities and one manufacturer on three continents designed seating units in the virtual design studio “Intercontinental Seating”. With each location describing local characters and sites for the remote designers, we were able to keep focus on comparative cultural contexts in design. A central content management system (Typo3) proved to be an effective platform for project representation and communication, both for students and external critics. Further communication and presentation technologies have been tested. As a result of this workshop, the manufacturer will develop two designs with the students and intends to offer these seating units in his product portfolio.*

Keywords. *Virtual Design Studio; Design Methodology; Planning Approach; Learning Environment*

With political conflict, outsourcing and global enterprises proliferating, environmental designers more than ever need cultural sensitivity. “Intercontinental Seating” (IS) was a virtual design studio project that raised awareness of cultural commonalities and differences through seating design. IS was taught on three continents by four universities and one manufacturer and supported by external specialists and critics. IS is a direct result of the ECAADE 2004 conference, where the project participants met and created the idea. Building on past virtual design studios, we focused on

- addressing the different planning approaches in different cultures and

- the efficient integration of external specialists and critics using accessible freeware

The project

The main task in IS was to design a “seating unit” on another continent for a character and a site that was given by the local student groups abroad. This setup challenged students to consider how to design for culturally specific characters in a specific location.

Public spaces provide a stage for people to communicate and interact with each other. In using these spaces, people sit on benches, stairs, slopes or even just on the ground. Sitting becomes

part of the communication process, making it more comfortable. The course “Intercontinental seating” focused on ideas of how benches or - seating in more general terms - should be perceived, planned and designed to fit the future needs of societies in transition. Participants from Deakin University (Australia), Stuttgart University and Wiesbaden University of Applied Sciences (Germany), University of Oregon (USA) together with the bench producing company Nusser (Germany) considered these questions in a three week project during spring 2005.

Each student or pair of students planned a seating unit for a site-specific client in a location on the other continent. They focused on how characters would encounter the seating and how their communication would be supported. So that participants could design for a certain cultural context, each local group of students first prepared a scenario of one typical hometown location with a real or fictional local character that brought the location to life. The colorful characters included a ballerina-rock star, a hippie joke writer, and a historic convict escapee.

In order to strengthen the cultural aspect, it was open to all participants to describe their proj-

ects and to communicate in their mother tongue. In these cases the peers used electronic translators such as “Babelfish” (<http://babelfish.altavista.digital.com>) to overcome these constraints.

Project timeline

The project consisted of five distinct phases.

In Phase 1 (two days), each local student group chose a local character and site and prepared a web based description.

In Phase 2a (two days), students presented themselves on the web, so the other participants abroad were able to get to “know” their peers. Students also decided which site to take, with the only limitation that it had to be on another continent. Site specific questions could be asked in the site forum.

In phase 2b (five days), the students presented their first design proposal online.

This was followed by phase 3 (two days), in which feedback by “partner teams abroad”, tutors and guest critics was given and received.

Those critics were integrated into the final design, which was prepared and presented in phase

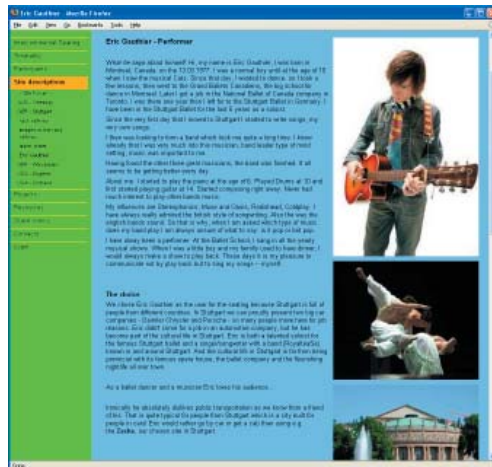


Figure 1. a) site description Stuttgart b)project result by Johannes Bader

4 (five days). All students had to turn in a poster on the web based platform. Depending on the country, some students also presented their work to a university audience using printed posters and models of their design.

Phase 5 gave the students feedback by external critics.

Afterwards, students were given a qualitative survey about the project.

Planning approaches - different ways of thinking

Using place-specific design settings and characters emphasizes the cultural differences of the participants and increases the intercultural awareness and reflection on ones own values and concepts. So students needed to look not only at the way the seating accommodates the human body but also how it supports culturally specific social interaction.

The cultural differences can be found between nations, but also on a more everyday scope:

Architecture, design and planning should involve the opinions, ideas and interests of those involved. Planning is always done by people for people who have certain biological and psychological properties, who live and work in social and cultural surroundings and who have certain abilities, skills and faults.

Respectively, architects and their customers have a certain “approach” to their tasks, consisting of methods, problems, aims and background knowledge. With the subjectivity of approaches in mind, one can easily understand that different approaches are likely to lead to different answers or solutions to the same problem. This implies that there is no objective true or false solution or way of handling a problem.

So being made aware of the different approaches will help the students to later work with other architects or planners, especially if they come from a different professional background.

Being able to play with different approaches also enables an architect or designer to gain a new perspective on things and this often implies finding a different alternative solution. So the change of an approach might also be seen as a “tool” to generate new ideas.

In this course with different cultures, different places and different continents involved, students gained a sense of the different – or actually in some cases the similar approaches.

Peer to peer review

As the main part of the project, the students chose one of the locations on another continent and worked with the given information. Not being able to visit the site personally, they had to rely on what fellow students abroad described. After creating a draft design, both students and critics were asked to critique projects in an on-line forum. To accentuate the nature of design feedback, we asked the students to review each other taking either the role of a positive or negative critic.

This succeeded in pushing students from giving neutral comments. Some German students liked the very open and constructive critiques that resulted from being forced to give only positive or negative feedback. They stated that if one really did this, it lead to more thinking and pondering, as one was forced to look at different sides of the projects. Some US students found the separation of positive and negative “too artificial” and would have preferred to give both at once. This might be due to the fact, that it might be more common to give explicit positive and negative feedback in the US, when asked for an opinion.

Integration of external specialists and critics

The project utilized technologies like web forums that facilitate easy interaction between people with different backgrounds and curricular

agendas. In addition to having teachers and students participate, we also had ten international guest critics, ranging in profession from architects and event designers to ergonomic physicians. They provided the participants with knowledge from other related fields, providing unique points of view.

By providing a simple but effective communication platform, it only took these critical discussants approximately three hours to get to know the 23 projects and to critique them remotely. In this way we were able to integrate the best resources and knowledge beyond the limited scope of a university. Sometimes their critic was straight forward like “think about designing something new” which was appreciated by many but not all students

Fully engaging external critics can be a challenge. For example, if critics only send e-mail comments to students with no response, they get no feedback for their involvement (Craig & Zimring 2000). Our public Web forum allowed critics, students and tutors alike to view the full flurry of comments as well as all the projects. We recommend inviting extra external critics for review comments as we had a 20% no-show due to the critic’s workload in their offices.

Communication and presentation platforms

The design ideas were presented and continually updated as webpages in the freeware Content Management System (CMS) Typo3. The system was installed on one central project server in Wiesbaden. Though the diversity of the projects, the CMS allowed creating a structured website with pages and subtrees allocated to each participant and linked between the projects. Its forms-based authoring tools fostered simultaneous authoring in an organized way. Using a Content Management System (CMS) as the primary means of communication allowed even technical neophytes to fully participate.

Further technical equipment

In addition to the CMS, we tried out several alternatives for live communication such as Accessgrid (VIC/RAT), Elluminate LIVE! and Skype internet phone. Technical problems such as firewalls and equipment incompatibility as well as the time difference curtailed live communication. As a result, the students mostly published on the cen-

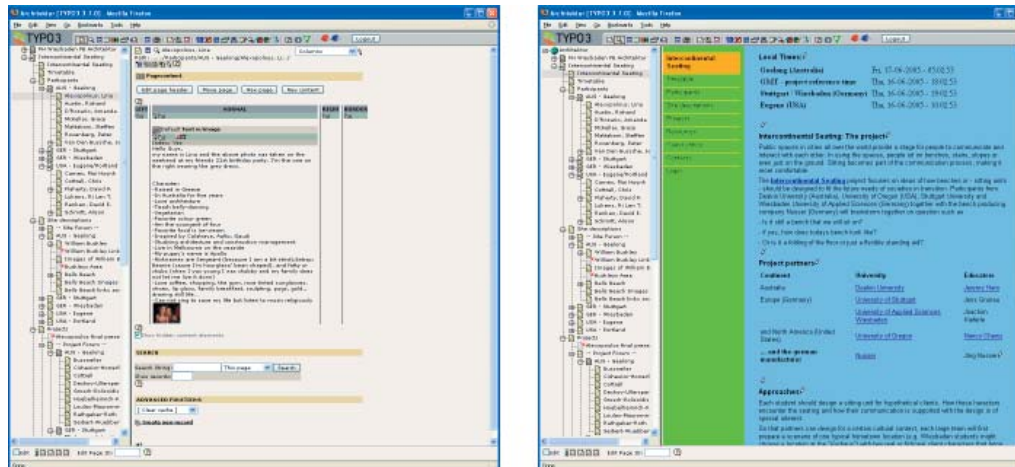


Figure 2. Administering the tree-like project web structure of TYPO 3

tral CMS and read written forum comments, rather than directly interacting. Those students who were able to talk directly with their partners using Skype Internet phone or Elluminate Live! courseware generally had a more compelling experience although at least one student was shy about broadcasting in a group setting.

We distributed a few Logitech IO digital pens among the schools to try sharing design process. The students liked using the digital pens because to "... print with the io-pen was really interesting and to see it 5 minutes later in the internet" by having "... a direct result on the PC ... makes the pen very useful in the design process". However some limitations like "... there's no playing with the line-weight ..." or missing "... the possibility to trace as with tracing paper ..." were criticized.

In analyzing the sketch files to understand the different working habits, we developed software to create graphs of the activity when using the pen. The Logitech file format in an encoded way supplies all necessary information of the strokes like absolute time code exact to 1/1000 second, x-position, y-position and others. With this information we can graph the timing and speed of the strokes created on one page with the pen.

A typical activity log of a design session is shown in figure 3. What can be seen are the continuous discussion- or thinking-breaks ranging from several to approximately 100 seconds. It also shows how the sketch begins tentatively with slower, frequent strokes, then has longer pauses for thinking and speeds up towards the end. With the absolute time code one could e.g. see, that

on average the maximum continuing drafting time was approximately 1.5 hours.

Due to the limited amount of pens, the number of cases does not allow serious statistical analysis. Correlating these activity log patterns to the stroke content could yield rich results in future research. We might observe that people doing a lot of writing on their sketches have a quite constant activity, whereas people who are mainly just drawing have longer breaks and activity phases with high increasing activity, a peak and symmetrically decreasing activity.

Trends that come from different culture of the students could not be seen in the available material.

Student feedback

Reflections on the impact of technology and the problem structure

Compared to other virtual studios, this one imposed a lot of structure via a highly scripted assignment schedule, CMS page formatting and on-line review rules. These structures allowed a large number of people to work together productively on the project, but constrained the types of interaction. The CMS' asynchronous format works well at accommodating many students and critics on different schedules and is well complemented by more vital live interaction such as instant messaging, audio and video. For example, a few Internet phone conversations allowed two students in a second Oregon satellite location to participate.

Students in the US who had used other Web

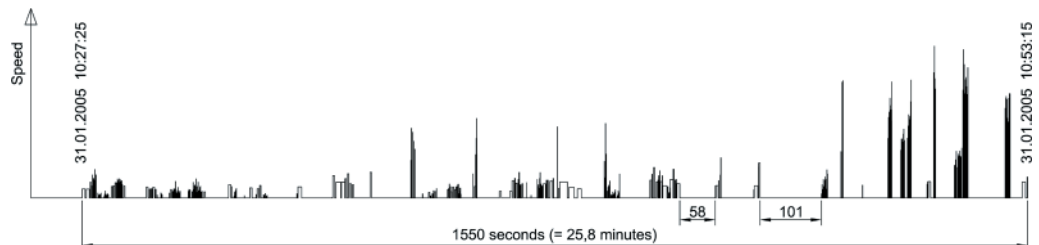


Figure 3. Typical activity log of a design session

tools found the CMS “cumbersome” for lack of customizability, while German students for the most part found, that “the technical tools did their job and were easy to use, hence they almost disappeared.” Thus students were able to “mainly focus on design and presentation issues.”

We not only used accessible tools to keep the focus on design, we also decreased the amount of remote design collaboration required. We chose to have remote students working in parallel to accommodate both a short project and an unknown number of participants. Having each location’s students act as the remote client rather than design partners greatly simplified both the students’ work and its coordination. Students learn from seeing schemes generated from different places, and share across cultures. They can proceed without waiting for partners or negotiating about content or file formats. The more difficult remote collaboration can require that designers negotiate design ideas, roles, procedures and aesthetics while also trying to develop rapport over the Internet.

By lowering both the technical and social challenges, we can open up the benefits of virtual studios to non-specialists. As a result, students of all abilities can participate, albeit with some variability in design and presentation quality.

Cross-cultural project

Most students found it very intriguing to work with other students from abroad and named this as the main reason to participate in the project.

Cross-cultural scenarios effectively accentuate the value of international collaboration. Some students suggested adding structure to the place description so that the amount of information would be equally adequate. On the other hand, a U.S. student who wrote “The medium samed us,” found the uniformity constraining, perhaps a reflection of the cultural need for individual expression. Simple features such as posting the face image of a person next to his or her comment can personalize this anonymous medium.

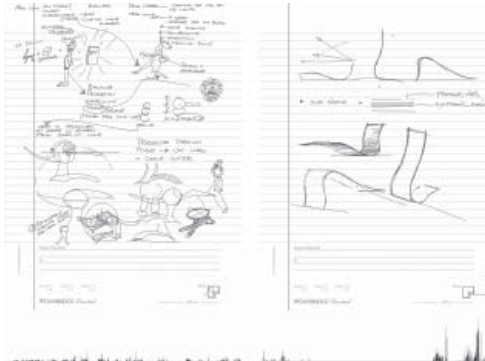


Figure 4. Sketch and activity log from Australian and European students

Different kind of project

Students found the novel aspects of the project engaging.

- Students liked designing for a location that was described to them by other students instead of actually looking at it themselves. Any questions regarding the site were answered by these fellow students, creating a second more personal and subjective layer between the location and the designer. This generated compelling discussions amongst local teams, on interpreting the descriptions or on what site objects might look like or feel like. For example, Oregon students interested in sustainable design were interested in using materials recycled from the area.

- The external reviewers from around the world were perceived as very valuable, especially the manufacturer. Students suggested incorporating more external experts into other projects.

- The strict and rather tight time schedule was a little unusual to some students in the US and they would have preferred a little more time. Yet they nevertheless found the project to be “less formal and more fun”. But many saw the tight time schedule positive and enjoyed plunging into work intensively and rather than dragging out the project.

- One student from the US focused on the international aspect and remarked, that he “has never been critiqued in German before”. This was

a unique learning experience.

Internet

Even though the World Wide Web seems omnipresent, students liked the fact that the project largely relied on using the Web for communication and publishing.

One often mentioned reason was, that the progress of everybody involved could be easily followed, or as one student stated “it was exciting to see the things grow on the web pages.”

While some students acknowledged that they participated to improve their computer skills, many expressed ideas such as “technology was both the most interesting and the most difficult aspect. It was a different learning experience to communicate without ever seeing anyone involved face to face.”

Others echoed that the course helped them hone communication skills and the ability to give and receive critiques.

The questionnaire also showed, that the students like working with the IO pen, even while they at the same time did mostly not see a large advantage over “hand-made” sketches. Because the few students who used the pens posted only still images, not animated sketches, on the web, they did not reveal much about design process.

The course provided a wealth of knowledge of how students at other schools work and think. Students noticed this and were able to reflect on their own way of thinking and the structure of teaching at their school.

Conclusion and outlook

The combination of the CMS Web-based collaboration and local face-to-face meetings worked very well for our short term project. Students found the cooperation with other universities and input of external critics interesting and rewarding. With the Web forum, guest critics could give their feedback at times fitting to their professional schedule.

Despite and because of its restrictions, the CMS Typo3 was accepted by all participants. It allowed all participants to concentrate on the design content because it was easy to use and documented their work in real-time. With its open structure and many available free plug-ins, the CMS can be easily customized, keeping the administrative tasks of a virtual design studio reasonable.

By bringing together colleagues who could introduce each other to unfamiliar tools, we discovered new, unintended directions for future research.

The results of the course and the students’ feedback encourage us to pursue and develop this approach of teaching and to focus future courses on concepts beyond the borders of one university or one nation.

One result of this project is the manufacturer developing two designs with the students and intends to offer the seating units in his product portfolio. The participants are looking forward to the seating units named “Deakin”, “Eugene”, “Stuttgart” or “Wiesbaden”.

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