

The Idea of Festival in Construction Education in Architecture

Introduction

Problems of contemporary education in general are the:

1. Lack of concentration in students, because of the continuous stimulation of the senses by advertisements, computer games etc.,
2. Continuous development of new materials, systems and methods in all fields and professions,
3. Continuous developments in education technology,
4. Multicultural classes,
5. Increase in the multiplicity of the world views of the students. (Willis, 2003)

Types of construction courses in EMU, Faculty of Architecture, Department of Architecture -

1. Construction theory, in other terms "introduction to structural systems,"
2. Construction studios, containing education about the elements (or components) of construction, and advanced construction studios.

The subject of this paper covers:

Type of Construction Course – Construction theory, "introduction to structural systems" for the first year, second academic term students. (ARCH142)

The Normal Format of the Course

1. The first three hours of the four hours (per week) course are used to teach the theory of construction, description of structural systems in architecture, and the ways in which they are constructed. An authority figure makes all the necessary explanations in front of the blackboard, and by using the necessary educational technology.
2. The last hour is used to help and support the students to prepare a research project on construction. This contains a poster, a model, and a research paper about a selected topic in construction. The topics are selected by the students. The teacher starts learning from the students, and a reciprocal type of education goes hand in hand with the self - education of students and peer group learning amongst the students.

Educational Problems of the Course

1. Lack of concentration of students, (or, the ability of students to concentrate on more than one subject), because of continuous stimulation of the senses. The result is continuous noise in the class.
2. The continuous development of new materials, systems and methods in all fields. This results in the loss of respect of the students for the course.
3. Multiplicity of the world views of people. The result is a demand to be open to subjective attitudes about construction.

Another local problem in relation to construction education is related to the environment, which is experienced by our students. Since most of the buildings are designed as reinforced concrete skeletal systems with brick partition walls, and since there is no variety in the types of construction materials, our students cannot learn through their experiences within their environment.

Description of the Problem – The Spring term of 2002 – 2003 started with a crowded class for the course ARCH142. We were two teachers and they were around sixty. There were quite a lot of hyperactive, and very noisy students in the class. The usual methods of authority did not work and the relation between the students and us was damaged. We refused to send some, or all of the students to the discipline committee. It was not possible to follow the normal curriculum of three hours per week of theory sessions.

Known Solutions to Similar Problems

1. Two recent solutions to the low concentration problem, have been to advertise the course in order to increase the respect and interest of students, and to get help, advice and support from the psychologists.
2. The problem caused by the continuous developments in construction is usually solved by teaching how to do research, rather than teaching "the whole" knowledge about construction.
3. Advertising the course by considering the differing world views of students, is accepted as a solution to the problem of multiple world views of students. A "student based education" is usually supported. (Willis, 2003)

Point of View

About Teacher and Student Relationship

1. The problem between the teacher and students should be solved by the powers of people who are experiencing the problems, and not by the tactics given by the psychologists. (The concept of understanding in H. G. Gadamer, 1981)
2. Advertising the course, is a way of using the source of the problem as a solution for it. Thus, it increases the severity of the problem in the long term. In other words, this method will cause further decrease in the level of concentration of students. (Baudrillard, 1993; Horrocks, 2000)

3. Using external advice and tactics, and professional advertisements for the course, destroys the honest relation between the teacher and the students. (for the concept of authenticity in M. Heidegger see Mulhall, 1998)

About Learning

1. The self - education of students should be considered for the sake of good quality learning. (Chomsky, 2003)
2. The quality of education increases with the pleasure it gives. (Nietzsche, 1996; 1967)
3. Education should follow the interest areas of students, rather than beginning with the easier and elementary items and working towards gaining advanced knowledge. (Nietzsche, 1996; 1967)
4. Students learn more from their friends and peers than their teachers, (Pirsig, 1989)
5. Teachers should be open to learn from their students in order to enjoy their work. (Althusser, 1996; Balibar, 1991; Hürol, -)

Criticism of the Existing Solutions

According to the above world view, a research based education is highly acceptable because of the learning characteristics it can provide. However, advertising the course and getting psychologists' advice in order to deal with the students (to moderate them) is viewed as artificial, harmful and unnecessary in terms of types of approaches and actions.

The Proposed Pattern of the Course

1. The continuous development of new materials, systems and methods of construction requires the students to be taught how to carry out research, as well as the theory of construction.
2. The increase in the multiplicity of students' world views forces teachers to consider these world views while teaching the theory of construction. The meaning of the concept of "student based education" should be discussed. This means that consideration should be given to the subjective attitudes, as well as the objective ones. One of the best ways of obtaining subjective attitudes towards construction is to ask for research projects from the students.
3. The noise in the class reduces the performance of the teacher and the quality of the content of the course. It forces the teacher to use his/her authority, which means the end of all acceptable relations between the teacher and the students. The best way of increasing the concentration of the students, or eliminating the negative effects of the noise in the class, is to increase the stimulants in the class, and to use them for educative purposes. Thus, the proposed pattern of the course consists of an increase in research education, depending on the situation in the class, and to demonstrate this research in the form of a festival, to the whole class or to the whole school.

The idea of festival has already been used throughout the faculty during the design evaluation. This was the idea of our Vice Chair Dr. Guita Farivarsadri.

The basis of the idea of festival, carnival or similar ideas are considered by many thinkers. For example, M. Russo (1997) gives reference to Bahtin, while relating the carnival idea to contemporary feminism. Similarly H. Lefebvre (1998) relates festival and carnival ideas to a feminist concept of urban design. O. Paz (1999) uses the tradition of carnivals and festivals in his poetic texts.

Description of the Solution

At the end of each week we were giving one to one critiques to our students and they were also helping each other. One to one relations were always more positive than the relations between the class and the authority figure. They were asked to make submissions and presentations twice each term and simultaneously with their friends.

Description of the Research Work

Students select research subjects which are interesting according to them, with the guidance of the teacher. They are asked to submit:

1. A poster and a model in relation to their subjects,
2. A report on their research.

The visual and verbal expressions in the whole research work were expected to be very simple and easy to understand.

Figures 1 and 2 show the general atmosphere of the course during one of the submissions.



Figures 1-2. The central hall during the festival.

The central hall of the Faculty building was used for the exhibition of the group projects in the form of a festival area. All students were teaching and learning simultaneously.

The largest hall of the Faculty was used for Power Point and some other types of presentations by the students. They were using the most recent technologies, as well as playing electronic music and visual effects in the dark. The hall was full of lab-top screens, which were ready for presentation.

There were five main groups of research subjects.

Examples

1. Structural systems,
2. Secondary structural systems,
3. Some structural problems,
4. Structural systems of some specific buildings,
5. The relationship between architectural styles and structural systems.

The following expressions correspond to some parts of the students' research projects which correspond to these groups.

a. Research about Geodesic Domes

Name of the student: *Maryam Gandji*

This research contains:

1. Structural behavior of geodesic domes,
2. The method of construction of geodesic domes,
3. Examples of geodesic domes,
4. A model.

Figure 3 outlines the experiment of a structural model of a geodesic dome.

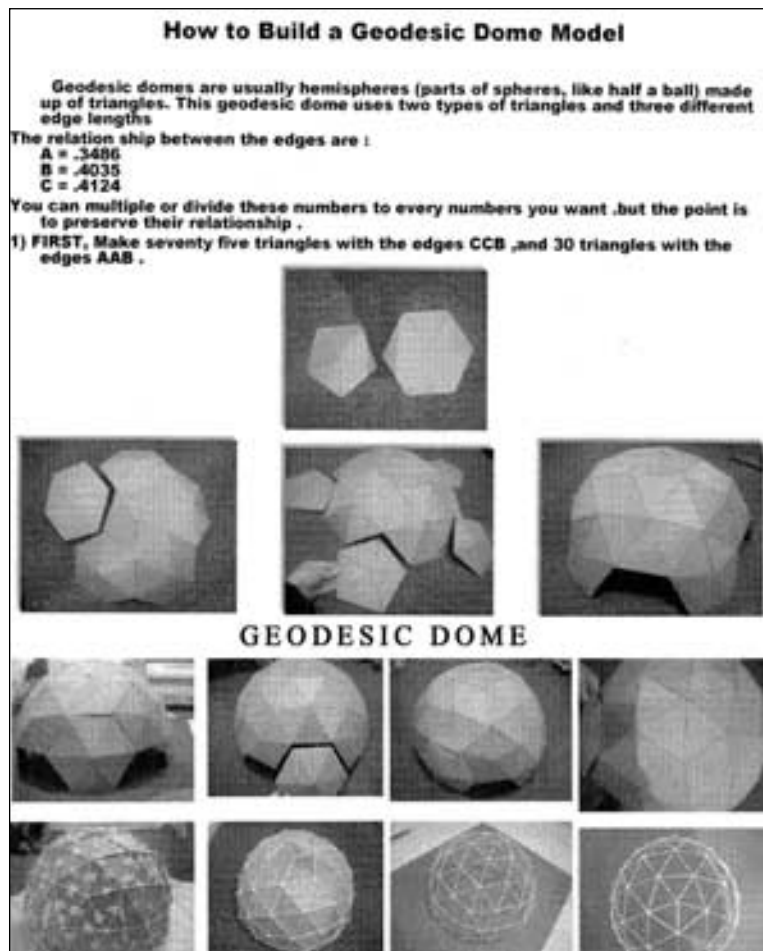


Figure 3.
"The way I made the model."

It became possible for her to explain her ideas with very simple statements and photographs. Thus, it was easy for the others to understand.

b. Research about Suspended Glass Systems

Names of the students: *Yasaman Aryanpour,*
Samaneh Ghaforian,
Yasaman Rezaee.

This research contained:

1. The different ways of relating suspended glass systems to the main building structure,
2. The structural behavior of cable trusses,
3. Examples of suspended glass systems,
4. A model,
5. Other methods of using glass.

Figure 4 outlines the experimental structural model of a suspended glass system.

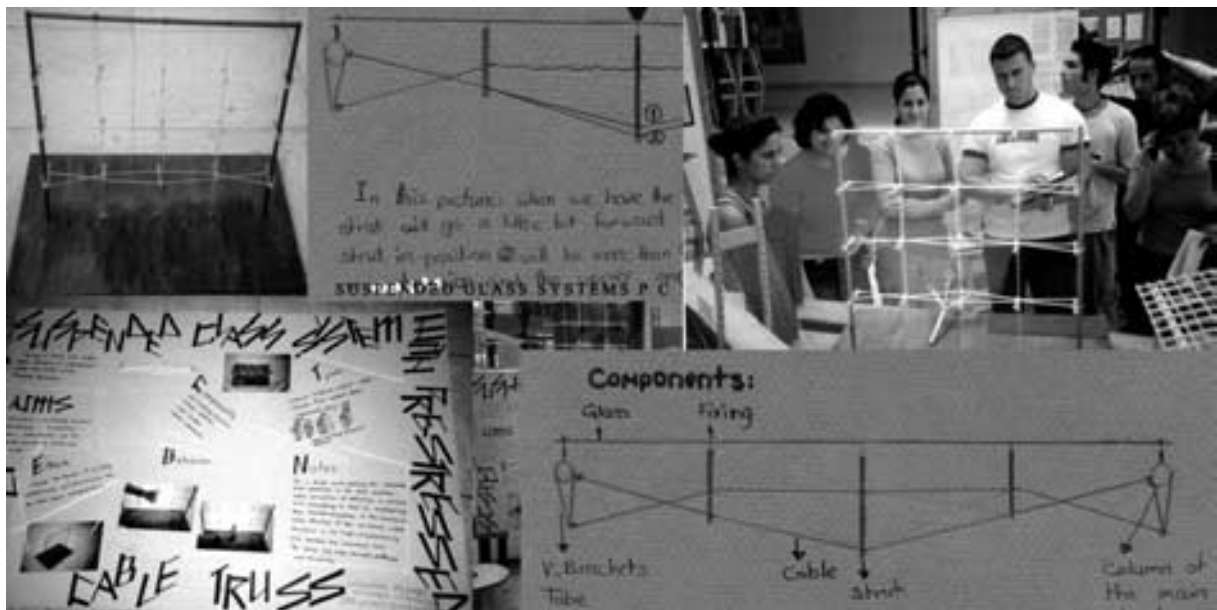


Figure 4.
A structural model of a suspended glass system.

Not only the students in the same class, but the students of the whole Faculty, and even some 'outsiders,' were interested in this project. Since the system was totally new and not well known, the students involved were honored because of their courageous attempts to understand and realize it; these systems will, therefore, no longer be foreign to the students of this class any more.

c. Research about the Problems of Short Column and Soft Storey during Earthquakes

Names of the students: *Can Gönül,*
Kübra Aktepe,
Bihter Taşpınar.

These students wished to understand some architectural problems in relation to earthquakes. We directed them towards the problems created by the wrong use of partition walls within reinforced concrete skeletal systems. They concentrated on soft storey and short column issues, which causes problems in all their countries when earthquakes occur.

Figure 5 outlines the experiment of abstract model making in respect of the subject. There were three types of models in this experiment. These were:

1. Model of a skeletal system without rigid partition walls,
2. Model of a skeletal system with rigid partition walls which form soft storey,
3. Model of a skeletal system with rigid partition walls which form short columns.

Students selected materials carefully in order to be able to compare the behavior of different skeletal systems.



Figure 5.
Abstract models, which represent the
formation of soft storey and short
column problems, and the students'
poster.

Since the models themselves were abstract models, which were designed to experience the problem, students developed a sense of the research model during this study. Their work attracted the attention and questions of many of the students throughout the Faculty, because of the different character of the model.

d. Research about a Building with a Membrane Structure - Carlos Moseley Music Pavilion

Name of the student: *Roya Doostdar*.

This student selected a structure, which is a composition of membranes and space trusses. The construction process was quite different from any other similar buildings. She collected information about:

1. Structural behavior of membranes,
2. Structural behavior of trusses and space trusses,
3. Examples of these structures,
4. Information about the architecture of the selected building,
5. The construction process of the building,
6. A model.

Figure 6 outlines the experimental stage of the structural model of the selected building.



Figure 6.
The method of making a model of
Carlos Moseley Music Pavilion.

We are still exhibiting this model as a good example of a structural model.

e. Research about Deconstruction and Structural Systems

Names of the students: *Pooya M. Malek,*
Kamyar L. Tehrani.

Two students wished to create a striking piece of work and chose the subject of the use of structures in Deconstruction. They were interested in the philosophy and technology of building structures.

Their research contained information about:

1. The general meaning of the term Deconstruction, including J. Derrida's thoughts on the subject,
2. The use of structures in Deconstruction was discussed in relation to architectural examples,
3. Some architects and their specific considerations about structures tried to be interpreted depending on their typical works,

4. Some slogans, which describe structural design in Deconstruction, are produced.
5. A Power Point show was added to the research.

Some examples of deconstructive architecture were collected, some books and articles about the subject were read, and some slogans describing the deconstructive attitude in structural system design, were developed. Some of these slogans are as follows:

1. "In structure they deny every standard and doctrines."
2. "Even the person with the least responsibility, should be the best in his/her profession."
3. "Engineering processes are challenged."

Figure 7 shows some examples collected during this research. This research also created interesting discussion in the class.



Figure 7.
Examples showing the use of structures in the buildings, which were designed within the style of Deconstruction.

These students developed the ability to have discussions with their friends, and to prepare good presentations of their research work, as well as a good understanding of a specialised type of the philosophy of technology.

Conclusion

The educational experiment described above, which was unavoidable and not well planned, shows that the increased time devoted to research education, and the reduction in time given to the theory of construction, result in an improvement in the quality of the knowledge gained, if there is a concentration problem among the students, and if the students have differing points of view about architecture. Insisting on classical methods in this situation is totally unproductive in such cases.

The exam results also show that students were following each other's work, and they learned a lot about construction and research during this process.

It can also be stated that the increase in time given to research might increase the quality of education even if there are no problems in relation to the attitudes of the students, because of the:

1. The possibility of self education,
2. The birth of questions, highlighting areas of interest, and learning whilst also enjoying the educative process,
3. The elimination of standardized and hierarchical learning,
4. Learning from other students,
5. Reciprocal learning between teachers and students.

However, verification of the last paragraph requires further research. By making small differences in the process, the method can slowly be developed. The needs of each class and each group of students in the class should also be considered whilst designing the details of this type of study or education. Action research can be proposed for the generalized development of the method.

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