

IT-CDE @ ICE 2008

1st Workshop on IT-supported Cooperative Design in Education

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Abstract

Concurrent enterprising, and especially the new waves of innovation in collaborative networks, are the key issues of the ICE conference 2008. The education of CE-related aspects is an essential topic to prepare the future professionals to the increasing cooperative dimension of every business fields. This workshop addresses the issues related to cooperation in collective design education: methods, IT-tools, sociological aspects and so on. The papers relate different co-design experiments performed across Architecture students in France, Portugal, Germany and Canada. The workshop aims to bring together, discuss, and improve the innovative pedagogical scenarios, and to stimulate a pedagogical network of innovative cooperation-teaching methods.

Keywords

Co-design, Cooperation, Education, Virtual Studio, IT-services

1 Workshop description

Design as a collective activity should be identified in numerous fields of production. Architectural projects bring together multidisciplinary actors involved in the “design & build” process. In many other domains where partners also share a common object under design (e.g. in automotive / aeronautical engineering, in computer science...), one can observe that:

- Teams are often composed of heterogeneous actors (in terms of skills, or origins).
- Different teams produce crossing “virtual objects”.
- These actors are more and more distant as the market becomes worldwide.
- The demand of collaboration is constantly evolving as well as the projects’ requirements.

Design education institutions have to prepare every future professional to cooperation, which is crucial in every collective activity, e.g.:

- Learning how to participate in, and manage, a collective project.
- Experimenting tasks and resources sharing.
- Understanding the complex sociological relationships between members of a group.
- Testing and learning the importance of communications management.

Moreover it is necessary to increase the students’ awareness of the use of IT tools that support cooperation:

- Nowadays many IT tools already exist, but they cannot perfectly fit the specific processes, objectives or organizations of a design project. The future practitioners have to know what dimension of cooperation a certain tool supports and how to choose a tool or another one.

- If we observe that students are often aware of existing design tools into their field (e.g. 3D modelling software in architecture, development resources in computer science), they don't know a lot about cooperation-support tools (i.e. CSCW as tools for communication and coordination).
- IT becomes rapidly incontrovertible to support cooperative processes.

Since many years concurrent engineering education faces the challenge of IT and students become more and more sensitive to electronic cooperation.

2 IT-CDE@ICE Topics

This first workshop on IT-supported Cooperative Design in Education aims to bring together teachers and/or researchers from different countries, and from different fields of activity/engineering, to discuss and exchange about their vision of IT-supported Cooperative Design in Education.

Although the workshop was open to every contributions from every fields of co-design, the contributions are representing the contemporary issues related to co-design education in the Architecture, Engineering and Construction¹ (AEC) field.

Many aspects of cooperative engineering education are addressed in the workshop contributions:

- Innovative IT tools (software and hardware) related to cooperation (e.g. videoconference, white boards, groupware).
- Innovative design methods (workflows, planning, studios, living labs).
- Educational scenarios used to put the students into cooperative design situations (mixed-skills teams, multilingual teams).
- Specific experiments or projects suggested to the students to stimulate the need for cooperation and coordination.
- Collective and sociological approaches of cooperation between "experts".

3 Contributions

The 4 papers of the IT-CDE@ICE workshop present interesting and complementary thoughts about teaching cooperative design to AEC students. All the papers are based on innovative educational courses recently delivered across European (and Canadian) pedagogical institutions.

- [Donath et al.] present a design experience both collective and individual, in which students used a BIM package to create, exchange and communicate their urban and architectural projects.
- [Goulette et al.] describe the FINC-AV experiment in which students discovered the concept of Virtual Architecture using Second Life as a collaborative and representational design tool.
- [Kubicki et al.] report the results of the Digital Cooperative Studio aiming to introduce cooperative issues to students through an environmental, multi-disciplinary and IT-supported design project.
- Finally [Van Leeuwen et al.] explain their experience-based analyses of collaborative behaviour aspects in collective projects. They apply the approach to education scenarios and suggest the potential of groupware tools to stimulate collaborative behaviour.

¹ The Architecture, Engineering and Construction field covers all the business activities and actors involved in the design/construction of buildings and civil infrastructures.