Interactive didactic modules for on-line learning via internet

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On-line learning can become a very efficient method of teaching in the University of the future. The Students can plan their curricula by selecting the offers of some universities coordinated that meet their specific aims. The communication interchange between student and teacher can be enriched through new forms of interaction via network technology.

Laboratories of interactive design, which involve the participation of citizens, can become a good occasion to learn designing linked to the human needs. The architect who is interested in the sustainable development has to consider local needs and interact with users to build a new environment full of local values.

Keywords: on-line learning, internet, teaching modules, participation, collaborative design, Neighbourhood Municipal Laboratories

Introduction

We talk about on-line learning instead of distance learning to avoid the uncomfortable impression peculiar of the word “distance”, meaning not “in person”. This implies a lack of participation, which is in strong contrast with the character of interactivity related in the usage of Internet. Italian Universities demonstrate a resistance against distance learning which probably comes from the perceived value added of the direct relation between teacher and student. Consequently distance learning is thought of as an inadequate substitute, which is useful only if students cannot attend at regular university courses. We intend to demonstrate that learning aided by network communications could add a new value, not imagined before.

The on-line relation between teacher and student is similar to a direct face-to-face. We could find a limitation in the lost of a direct relation between students which is an important social aspect. This is the reason to define “partially” distance learning, or better say partially on-line learning.

Our aim is to develop tools which could create a virtual community where the network of relations would not be only vertical (teacher-student) but also horizontal (between students, between teachers), using information technologies.

We are experimenting didactic modules - equivalent to 30 hours each - to be used in post-degree courses or in courses for permanent learning.

Examples of this kind of modules are the ones in the master course “Sustainable Interactive Design and Multimedia” active during the last three years in the Faculty of Architecture, Roma Tre University.

This one is a partially distance learning course, or better say partially on-line, teachers and students have a meeting every two weeks (students with difficulties to attend can agree less frequent meetings with teachers) and students without computers can use the LabCAAD computer laboratory.

The research CAAD laboratory hosts the course and lectures are published on the related Web site (http://rmac.arch.uniroma3.it).
In the current year we are improving the didactic curriculum offering five types of didactic offer:

1) Lectures;
2) Laboratory for Interactive Design;
3) Manuals for self-designing;
4) Discussion areas for conceptual topics;
5) Case studies.

This offer should allow a high degree of interaction between teacher and student to simulate a relationship similar to the individual teacher-student one, with possibility to have meetings in person too.

**Lecture module**

In the Lecture module the student is guided through the knowledge process. He/she is aided by a wide range of interactive media and stimulated to deepening related topics. He/she can evaluate his/her degree of knowledge through on-line test and ask questions through asynchronous or synchronous on-line communication tools.

The modules' hypertextual structure is a powerful help in this learning process. Lecture modules, which will be deepened, are related to design processes and interactive methods for community design. Some of the topics considered are:

- Sustainable development and Community Planning;
- Collaborative and Participatory Planning;
- Human and social creativity in landscape evolution;
- Sustainable town: model and systemic relational structure of an ecological town;
- Interventions of urban ecology in water cycle;
- Utopia and Sustainable Development;
- Visual communication techniques;
- Teaching Interactive CAAD;
- Interactivity on the net: the development of hypermedia communications to facilitate community participation in urban transformations;

Some lectures are focused on methods for interactive design:

- Planning for Real;
- MicroPlanning;
- Cognitive maps;
- Gulliver Maps;
- Interface for Design;
- Strategic Choice.

The Research Group studied and long experimented, for a number of years, these design methodologies, focusing in the last years on processes for sustainable interactive community design.

**Laboratory Modules**

In the Laboratory Modules student will be guided in developing an exercise of interactive and sustainable based design. In particularly referring to the official agreement between the University Of Roma Tre and Municipality of Roma, which will foresee a close collaboration between the LabCAAD and the LMQ (Municipality Laboratory of Neighbourhood), aimed to local urban renewal and self-sustainable development.

The action is focused in developing designs for
local renewal together with inhabitants, technicians from Municipality, practitioners, university professors.

In the Laboratory Module students should choose a design topic related to a particular area, then he/she will select one of the methods, previously studied, which better suits the design topic, and follow the different phases of it. He/she should keep contact with one of the Neighbourhood Municipal and start, together with all people involved, a community design process. Results of this process will be described with on-line hypertext to be evaluated by the virtual community of teachers.

All materials needed by the students will be provided through Internet technologies (FTP) and he/she will have also the opportunity on the net to learn from other related experiences and find out other useful information and related sites.

Topics for Laboratory modules:

- Renewal of common places (school gardens, courts, neighbourhood gardens, common roofs);
- Riqualfication of green areas (residual not used areas, small neighbourhood gardens, common green roofs, urban green areas);
- Riqualfication of streets and squares (interventions of traffic calming).

**On-line manuals**

We are preparing on-line manuals for self-designing, useful for not architect people. These manuals would to do able the citizens to better participate in the design workshops in the Neighbourhood Municipal Laboratories.

In the our Web site (http://rmac.arch.uniroma3.it) is visible an self-designing manual to help teachers, students and parents of students to design micro interventions inside and around the school (traffic calming, sure links to bicycle and protected paths,
riqualification of common green areas).

**Discussion Areas**

To provide new way of interaction between students and teachers we are using different internet technologies to encourage the creation of different forms of virtual communities (the students, the course, the work-group, etc.); the characteristics of different internet protocols renders them adapt to stimulate the interaction in different conditions. The only constant is the effort to use technology that will not marginalise anyone, keeping the technological complexity as low as possible for every application.

The Web site (http://rmac.arch.uniroma3.it) not only hosts lectures and tests as long as examples of exercises and applications but also gives information and on-line news about Municipal Laboratories and contains a rich harvest in hyper-media form of data about urban plans (“progetti urbani”) and discussions and remarks about them. The Web site becomes in this way a place of discussion, which is a first important step for interaction.

Another standard thus very useful asynchronous tool is the e-mail; the only not standard protocol used is an integrated environment (hot-line, carracho,...) which provide a rich variety of both asynchronous and synchronous tools like: news, chat, private chat, personal messages, files downloading and uploading and more, within a single interface.

Other tool are or will be experimented (for instance MOOs) always keeping the same principles of...
focusing on needs and allow the widest diffusion possible.

The next step of this experimentation will try to improve the interaction both in local and remote way, connecting University, Municipal Laboratories together and with others, like associations or single citizens that are already connected to the web (local authority should provide new connections with public net and agreement with private companies, to guarantee the access to everybody).

Case studies: application of Strategic Choice in the urban area of Marconi Magliana

During the Agenda 21 Local Forum – part of the general Agenda 21 Forum of the Municipality of Rome – promoted by the USPEL Office of the Municipality of Rome, the Roma Tre University proposed to the LMQ laboratory of Marconi Ostiense to create a working group to apply Strategic Choice on the area of Marconi-Magliana, to join and coordinate all resources operating in that area, following the direction of a sustainable development.

The application of this method brought about the development of an HTML hypertext site, which gives the opportunity to participate in the development of the work, even to people who normally could not be there in person.

References

Giangrande A. 1998, Labatori Municipali di Quartiere, partecipazione e nuova legge urbanistica, Urbanistica Informazioni, n.158
Giangrande A. e Mortola E. 1998a, Trasformazione di via Papareschi strada residenziale, Urbanistica Informazioni, n.158
Giangrande A. e Mortola E. 1998b, Un esempio di progettazione interattiva: il casodi via Papareschi, Urbanistica Informazioni, n.158
Mortola E., Giangrande A., Mirabelli P., Fortuzzi A., Introducing hypermedia tools in community planning and design, ECAADE 98 Conference, Paris
Web References

[1] Site for the authors work is at:
http://rmac.arch.uniroma3.it

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