

Souillac II Final Report - 5

Education: Interactivity & Pedagogical Tools

The discussion of interactivity and pedagogical tools began with descriptions and comparisons of the situation and initiatives in different countries; projects actually existing, in the making or non-existent and therefore needed. The discussion underlined both the strong interest and the many limitations in today's context for interactivity as a pedagogical tool as well as the means to develop it. As a first step, the working group defined the objectives of this approach to education and then followed with the recommendations and proposals for projects listed below. Summarising the results of the discussion as we have, does over-generalise or overlook some of the important particularities of the projects presented.

The group was made up of designers and operators of multimedia educational projects, representatives or consultants for governmental institutions working to develop the new multimedia technologies for education (Ministries of Education, Culture...) and industrial representatives who have supported innovative projects. It also included long-distant participants on line, Robert McClintock, Director, Institute for Learning Technologies, Columbia University, New York (USA) and Teemu Leinonen, Co-ordinator, Future Learning Environment, University of Art and Design, Media Lab, Helsinki (Finland). Those interested in more information on the various projects discussed are invited to examine the Web sites at the addresses below. That list is not closed and it is hoped that it could be the beginning of a compilation of interesting sites accessible in the future through the Navihedron (see part 5). Any additions you might wish to add should be sent to the co-ordinator listed at the end of this report.

Objectives :

To develop :

- educational processes re-appropriating interactive technology by reversing the approach which starts with the tool - the exterior - by starting with content - the interior;
- processes of modelling 'virtual knowledge' to fit individual cultural or professional needs by taking into account differing cultural and professional contexts;
- collaborative pedagogical programmes favouring participation, learning and experimentation modelled on the artistic process;
- interactive cognitive processes permitting those who learn to participate in the development of the knowledge acquired.

Means :

There were two kinds of proposals made during the discussions: recommendations coming from the shared experiences of the group, and proposals for projects coming from stated needs. The projects proposed in this final report are a call to those interested to jointly pursue the development of those actions deemed necessary by the group. In some cases that means support for and participation in programmes already existing in certain

countries. For others, it will be necessary to form working groups to put into action those recommendations.

- **Build educational projects clearly proposing :**

- pedagogical forms specific to each intellectual discipline in its proper context, examples: Ocean of Know, where through telecommunications and robotics, junior high-school students studying the sea can see and act at a distance with sea creatures their actual environment; or, long-distant medical training such as tele-surgery taking place in real operating rooms;
- a return-path of information to industry, permitting it to participate in interdisciplinary exchanges, in support committees and to use curricula and information for its own educative needs;
- a method of effective evaluation throughout the development of the project.

- **Organise an International Interactive Technological Observatory in the context of art/education/research/industry :**

- as a response to the needs of specific pedagogical concepts for each discipline rather than forcing those concepts into existing technological or market solutions;
- adapting its 'virtual' nature - the network model - as the most appropriate structure for accelerating technological progress;
- to develop a view based on transdisciplinarity of the potential of the technologies in art, education and culture.

- **Organise a network of pedagogical innovation to better adapt form to content :**

- to introduce an innovation-based dynamic - where necessary through the use of outside experts until proper skill levels are reached - in the relationship between designers/architects and content creators;
- to make available production specialists serving as intermediaries between content creators and end-users;
- to make the benefits from local initiatives available to all;
- to adapt its 'virtual' nature - the network model - as the most appropriate structure for accelerating technological progress;
- to assure the presence of catalytic elements, e.g. institutions, with political, financial or others means to influence pedagogical development in an innovative way.

- **Teach teachers by :**

- bringing teachers and students to operate within the same learning dynamic and in the same environments permitting both to better understand contemporary society and the others' explicit and implicit sources of information;
- training teachers to use technology and, above all, to understand its potential through unorthodox applications or approaches, especially concerning interactive technologies and the new symbolic languages that accompany them.

- **Develop pedagogical resources :**

- that encourage learning processes closer to actual experience (e.g. how video-conferencing processes add to understanding network interactivity). In other terms, to make comprehensible the difference between providing or creating information and making it felt through interactive experimentation,

example: the long-distance interactive experience of Young MacDonald's Farm where the student choose, through captors, cameras, microphones and robots built by the students themselves, to replace the manual practices of agriculture and aquaculture with networked operations during the time they are not physically present on the farm. This example demonstrates the importance of the complimentarity between the real-time communication tool and on-site experience, as well as dealing with data in virtual space, navigating the Internet, and shows the importance of the students' mastering the tools themselves and not relying on engineers.

- to understand the nature of the content of digital media so that the information and the person-to-person interactivity are not replaced by the tool and its man-machine interface. It is, therefore, important to encourage students to master the tools and understand the influence of form on content, in particular, to understand that "images" teach very little in themselves when divorced from the process of human interactivity.

- **Normalise on-line translation :**

- developing it from existing experiences and technologies;
- developing symbolic multimedia representations specific to each discipline, ideally, representations generally accepted and intuitively understood in each discipline.

- **Modify educational working methods :**

- through total immersion into the interactive tools in the classroom and other learning programmes (see Teach teachers);
- through expanding the time spent on interactive projects rather than textbook based exercises;
- through evaluating students by what they can do, rather than what they know, to evolve toward pedagogical systems adapted to revealing the creative potential of each person and to develop the faculty of adapting and appropriating the technology.

WEB sites referred to :

<http://www.amaze.co.uk/souillac/> (Navihedron)

<http://www.mlab.uiah.fi/fle> (Future Learning Environment -project, University of Helsinki)

<http://www.mlab.uiah.fi/~teemul/kopis/slide1.html> (idem, but specific info for Souillac II)

<http://www.educnet.education.fr> (French Ministry of Culture)

<http://www.fis.utoronto.ca/mcluhan> (McLuhan Program in Culture & Technology)

<http://www.music.mcgill.ca/~mcentury/souillac-links.html> (proposed by Michael Century)

<http://www.univ-paris1.fr/UFR04/benayoun> (example of a university site built by an artist)

<http://www.t0.or.at> (Public Netbase t0 Media~Space)

<http://www.zkm.de> (from this homepage, ZKM, Institute for Visual Media)

<http://www.newmediacenters.org> (New Media Centers, technological observatory, USA)

<http://www.oceanofk.org/YMFSite/html> (Young MacDonald's Farm)

<http://www.oceanofk.org/> (Ocean of Know)

<http://www.ilt.columbia.edu/> (Institute for Learning Technologies, Columbia University, USA)

<http://services.worldnet.net/ote/> (Observatoire des technologies pour l'éducation en Europe)

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