The development of multimedia supports for teaching and training as a learning process

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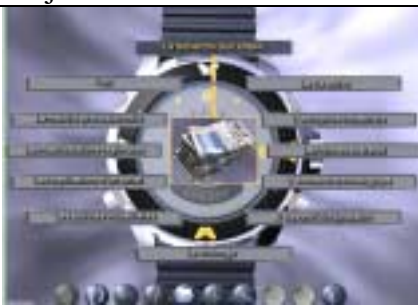
Problematic

The advent of multimedia and networked environments for teaching incites to constitute multidisciplinary teams for the realization of new (teaching) materials. In regard to the traditional courseware production, this way of sharing knowledge and resources give rise to a novel situation of work in education and training. The process of designing computers based courseware is a learning process for the different partners involved in the projects.

This poster illustrates the matter by three projects of development of courseware based on the use of computer's technologies and presents the lessons learned from the participation in their development.

Three projects

The projects concern the secondary school. They require for their realization technical, pedagogical, didactical and organizational skills.

Project 1 : SUMUME	Project 2 : SYNERGIE	Project 3 : ERMITAGE
Students (8th level, Centre secondaire du Bas-Lac) of the project SUMUME at work	Some topics at disposal concerning the working world of the « Arc jurassien »	The activity *Pyramide additive* in the « room » *Calcul lacunaire*
This project concerns learning sequences in Mathematics, French, History - Geography for the 8th level of the secondary school. Being a joint cooperation between the State, a private industry and a University Institute, the SUMUME project has merged geographically distant and professionally different structures -political, industrial, teaching, university- who have had to learn to work together	In this project, a didactical CD-ROM presenting the economy of the region "Arc jurassien" has been realized. This project has necessitated different steps in reaching agreements between the partners from the educational or the financial world. It has fostered creative dynamics between the offer of unknown technical possibilities and the suggestions of pedagogical activities.	This project will offer mathematical activities on the Internet (www.projet-ermitage.org) adopting a spatial metaphor. Each activity is located in a room of a "virtual" museum. This project constitutes a nice opportunity to observe how users modify their attitudes depending on whether they find themselves in the position of a lay user (as a student) or of a professional user (teacher) or of a designer.

Lessons learned in these projects

Some recommendations about collaborative working and sharing of know-how to produce multimedia supports for teaching can be issued from these projects. They concern the actions of the design teams and their relations with the users and the technical devices.

About the collaboration

Collaboration sets generally more problems than expected

There is **mutual ignorance of the professional cultures of the partners** who are not accustomed to working together.

The **technical potentialities** are often badly evaluated (pedagogues can limit their ambitions by underestimating the technical possibilities. Others, on the contrary, can propose activities which realization exceeds the technical capabilities or budgetary at disposal).

The teams of development must be able to create a **common culture** and each partner must learn to know the cultur of the others.

Time at disposal to work out a common language and common references between the various partners is often too limited.

The possible **use of pre-established standards or diagrams** should be considered to improve the means to share knowledge.

The **geographical distance** can create a handicap from this point of view. The **written communication** raises more difficulty than the oral one.

It should be organized as often as possible **face to face meetings** to improve communication and mutual understanding

About the end-users

The **expectation of the targeted public** remains often implicit. The same occurs for the subjacent theories of learning. These unsettled situations can be sources of misunderstanding.

The end-users (teachers, students) should be regarded as **partners** of the design and be more and more integrated in the design process.

The **realization of a learning tool** is a strong motivation for its use. That sets the problem to interest other people to use it.

The first users of a novel system **can retreat** on less adapted tools but of a larger social use (powerpoint for example).

The **period of development should be extended** by the follow-up of the users. During this process, the designers can learn a lot from the lay-users.

About resources and know-how

The **culture of the memory** of the projects is not developed. Its importance seems often underestimated.

Why so ?

The "**documentation**" should not be neglected in the schedule of a project.

The consideration of a device as a whole makes it possible to consider resources (other software, paper documents, etc.) that can be used with **no further need to invest wider**.

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