
E-CREATION

AN ORIGINAL WAY OF INTEGRATING DISTANT LEARNING ORIENTATION IN PRESENTIAL COURSES

Authors – Anne-Dominique Salamin, HES-SO Valais, Cyberlearn, Danièle Rueger, HES-SO Fribourg Cyberlearn, Switzerland

Context

More than 12000 students enrol every year in the different curricula proposed by the University of Applied Sciences Western Switzerland¹. This university offers students strong links with the real professional environment, either via very concrete courses (laboratory work, experiments, etc.) or by helping with developing projects ordered by professionals in action.

Globally, courses are provided by lecturers in frontal learning situations, but this University enriches its pedagogical concept by including blended learning to the curriculum. Right now, more than 1300 courses are available on line, published through the Moodle platform (<http://cyberlearn.hes-so.ch>). Most courses use the LMS as a simple repository, but increasingly tend to include multimedia implementations to offer students more possibilities.

To sustain the expansion of e-learning in UASW-CH, the e-learning Centre Cyberlearn was created in 2004 with an annual budget of about 250'000 euros. This Centre offers various services, ranging from LMS administration to specific resource development or on line course certification.

One of the most innovative service aims at backing-up didactical creativity: the ecreation call. Such an internal call is launched yearly, to globally address professors wishing to develop their own multimedia course, for distance teaching, thus helping students to understand theoretical concepts through illustrations and interactions.

The ecreation call

2009 will be the fourth launch of the call. Every selected project will be granted 12000 euros (real money), but to be selected and receive funds, it must first fulfil some important criteria:

- The project should address a specific didactical issue, such as helping students understand a highly intangible notion, should offer an innovative way of learning or understanding this notion, or propose a tool to help students be more efficient in a professional environment.
- As UASW-CH lecturing is proposed in 31 different geographical locations, collaboration between professors, teaching the same course, may not be so easy to build-up. Therefore, the ecreation call requires that two professors, teaching at two different sites, lead the project.
- To ensure that site management gets involved, or at least informed of the project's existence, it must allocate an equivalent amount of money as offered by Cyberlearn. Real money is not compulsory, the use of a specific technology, machine or virtual money (assistant hours etc.) are gladly accepted.

Some projects

As the first call (2006) aimed at developing courses on the LMS, selection criteria were more informal. 16 projects were selected and some very challenging indeed. "Solangles" for example, proposed by a professor specialized in architecture engineering, represents the impact of the sun movements on a building, in mapping and cross-section views. "Web conjug" provides students with a solution to train their ability in managing French verbs conjugation. "Interactive business plan" assists future graduates, not studying economics, with the creation and

¹ Quoted in this document as UAS W-CH

management of their own business plan. A tool, more dedicated to professors, "SAQ-CM", proposes a pedagogical and communicational analysis of a MCQ before being published on the LMS.



Figure 1 : ecreation 1 : the Solangles project

The second call (2007) was more oriented towards tools and interactivity. The newly implemented rule on compulsory collaboration between 2 sites had an impact upon the number of projects presented. Eventually, only 7 projects were selected. For example, the "virtual medicine cabinet", assists future nurses with calculating the accurate drug dosage to be given to a patient. This tool is a web application. A suitable spatial metaphor, rich user interaction improved by drag and drop technology, and automatic calculation give nurses the impression of working in real situations. The "IDOINE" project provides students of the health sector with multimedia information transforming simple .pdf cards describing curative treatments (i.e. venipuncture) into interactive and rich multimedia contents.



Figure 2 : ecreation 2 : the Idoine Project

The third call (2008) was turned to video resources development. 5 projects were funded, 3 of which reached an amazing good quality level. "E-backtracking" is oriented towards algorithmic computing, and to help students understand and fully grasp this notion, it offers various resources: flash games, effective video including descriptive explanations. "Info learning tools", related to Object Oriented Programming, consists in a range of small videos showing how the real world object metaphor and the OOP interact in order to illustrate notions like collections, objects or exceptions. Another project, developed in the health sector, makes use of an interesting approach to help students validate their knowledge understanding. After having viewed 3 different videos on key notions linked to the task: "mediate auscultation with a stethoscope", students are invited to view a 4th video, containing many errors on patient's well-being, auscultation and information. Armed with a pencil and some paper, they must spot and write down the errors and propose solutions.

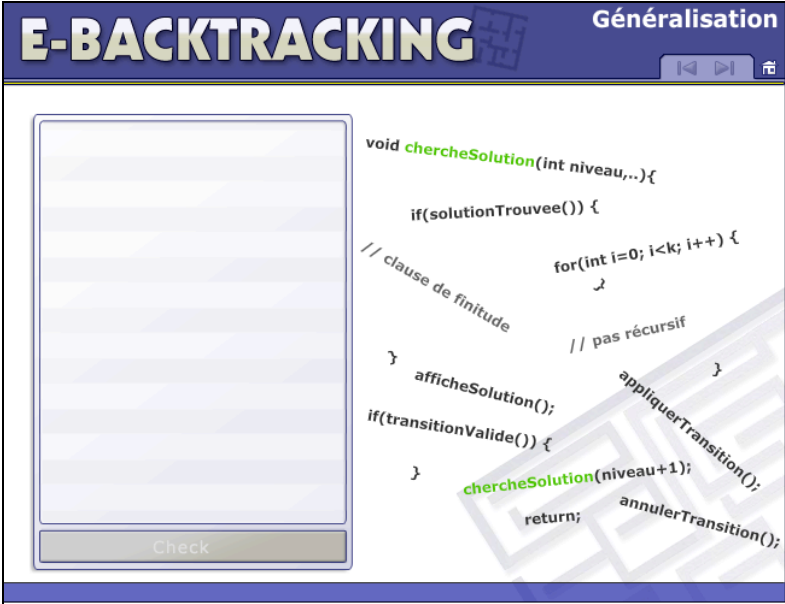


Figure 3 : ecreation 3: the e-backtracking Project



Figure 4 : ecreation 3: the Info Learning Tools Project



Figure 5 : ecreation 3: the mediate auscultation Project

Analysis

The ecreation call is not only interesting because it increases the number of multimedia resources developed in the UASW-CH during a year time, but also because the professor has the complete control on the project, from the idea to its final implementation. Cyberlearn is ready to help teams on pedagogical and technical issues, but the real "directors" are the professors involved in the projects. The heavy involvement, the collaboration as a multidisciplinary team, lead professors to reconsider what they teach from two different angles: how can technology, particularly multimedia technology, help illustrate a specific notion, and how will didactical notions be challenged by the use of multimedia technology. The crossing between didacticism and technology proved to be productive especially in a distant learning context. Professors are progressively aware of the fact that this absence impacts strongly on resource design: resources should embed at least three roles: illustrating, guiding and evaluating.

Largely due to popularization and simplification of multimedia technologies, increasingly more ecreation resources are being created with a rising creativity level, even when projects focus on highly technical issues. We consider that this creativity level is a direct consequence of an awareness of the tool potentialities and of the two-way view on a single learning object by two different professors, each offering his own personal understanding and didactical praxis, fertilizing debate, design and final realization. An additional positive impact on motivation and personal investment in the resource implementation, and so on the quality and value of the final product, is spurred by the fact that the project was selected among others and then funded. Besides, the media definitely influences resource conception [2], integrating playful and often amusing perspectives into the resources. For example, in the "e-backtracking" video, to depict the characters' thoughts, the actors feature an angel and a devil. All the angel's attempts are represented as a pattern and displayed in a very efficient and original way, relying on opposition between a naïve beginner and a tricky expert. The specific language codes (humour, shifts, opposition between two characters, understatement, overtone, etc.) form a specific language which is particularly understandable by young adult students. However originality and creativity do not mean seduction and the final resources must nevertheless present a rigorous scientific point of view.

Some weak elements need to be pointed out. The power of video essentially resides in its high capacity to illustrate very abstract notions but the release and use of video resources do not guarantee knowledge acquisition. Evaluation tools should be developed for students (and/or professors) to measure the evolution of the learners' gains. Efforts provided by the professors in understanding and managing technical tools (although solutions are provided to help them in this task) seem to prevent them from investigating the next learning phase:

evaluation. The "mediate auscultation" project, however, accounts for a significant exception, by presenting the "error movie" to help students measure their understanding of the knowledge to be acquired. Another difficulty is related to the level of knowledge illustrated in the ecreation project, level which is often simple, suited for beginners and which, according to Bloom's taxonomy [1], concerns level 1 and 2 (knowledge and comprehension) rather than level 3 and 4 (application and analysis). The main problem related to this statement is that, the resources are probably viewed only once, and will probably not be reused until the next teaching session, because of the simple level of knowledge they illustrate. As a consequence, the return on investment, after realization and financial efforts shed on the projects, is rather low. However ecreation leaders are allowed to propose series and if they prove the coherence with previously lead projects, they can benefit from renewed funding. Possibly this could encourage professors in providing a global vision of knowledge and make them want to progress towards higher levels of the knowledge they manage. In some teaching domains, for instance computing, the durability of knowledge is very short: a new programming language is proposed every year and the software interfaces change every 6 months. In such a context it is more difficult to select knowledge that can be durably represented by multimedia resources. This problem impacts on knowledge which needs to be illustrated and mediated, using multimedia.

What is students' opinion on this type of learning objects? Generally they greatly appreciate video and game resources, but consider it more like a playful approach to the real learning material, rather than a vital element in the learning progression. The "virtual medicine cabinet" project and other games, which tend towards more assessed Bloom's taxonomy levels 3 to 5(Application, analysis and synthesis), are perceived as an essential help and students use it several times during different learning phases.

The 4th ecreation call has been launched at the beginning of year 2009 and focuses on interactive evaluation based on multimedia. Funded projects will be known early in April 2009. We are eager to discover and assess the new kind of progression in knowledge analysis that will be achieved.

References

[Http://cyberlearn.hes-so.ch](http://cyberlearn.hes-so.ch) block "resources e-creation"

[1] Bloom, B. *Taxonomy of educational objectives*. Ed. Longman. 1956

[2] Mac Luhan, M. *Understanding Media: The extensions of man*. Ed. Mac Gral Hill. 1964